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Principal Indicator Species of Forested Plant Associations on National Forests in Northeastern Oregon and Southeastern Washington

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INTRODUCTION

The purpose of this indicator species guide is to provide handy reference for the most diagnostic species of the forested plant associations found in the Blue and Wallowa Mountains. The user will be able to key to the proper plant associations once knowing how to identify the plants that give site interpretation.

Indicator plants are not always the most common plants. Often they are used in conjunction with other indicative plants to make a call of the proper plant associations. Once knowing how to identify these species, the user will be able to understand the environmental or habitat characteristics necessary for sustaining the plant that gives it different rating qualities.

Plant associations are plant communities (groupings of plants) growing in uniform habitats with long-term, stable species (climax species). If the particular stand can persist and develop in its environment without major disturbing influences, the potential of the site is reached. Once knowing the potential of a site, we can then manage our lands to either achieve that potential or influence the character of our plant communities to attain other objectives. The plant association classifications provide management considerations for the land manager based on the proper identity of the flora comprising the plant communities.

Plant associations have been described for the Malheur, Umatilla, and Wallowa-Whitman National Forests in two publications to date: Hall (1973) for the Blue Mountains; and Johnson and Simon (1987) for the Wallowa Mountains. An update of the Blue Mountain classification is being prepared at this time with anticipated 1990 publication. Some plants are included in this Indicator Species Guide in anticipation of new Blue Mountain plant associations requiring knowledge of these indicators.

FORMAT OF THE SPECIES DESCRIPTIONS

FRONT OF PAGE

Common Name: The most widely accepted common name used in the local area.

Scientific Name: The currently accepted generic, specific and varietal names are given following "Vascular Plants of the Pacific Northwest" by Hitchcock, et al. In some cases, the previously accepted scientific name is provided in parentheses.

Family Name: The family to which the species belongs is given beneath the scientific name.

Code: The alpha-numeric code used widely for computerization is provided following "Northwest Plant Names and Symbols." by Garrison, et al.

Range: Describes the geographic limits of the species in the Pacific Northwest.

Habitat: Provides the moisture, temperature, elevational requirements for the species and the kind of forest in which they grow.

Look Alikes: Similar species that are often confused with the plant being described and how that species differs from it.

Indicator Value: The value in knowing the described plant in order to key out the plant associations. Important plant associations are often listed of which the species is indicative.

Miscellany: Provides interesting and useful information about the plant. Native American use, current use, edibility or toxicity, palatability to ungulates, and response to silvicultural management are provided here.

Photograph: The best available color photograph is provided to help in diagnosis.

BACK OF PAGE

Common name, scientific name, and code are given as headings.

Habit: The general appearance of the plant including stature, size, roots, longevity of plant, and foliage.

Stems and Bark: On shrub species, the color, hairiness, branching pattern, and texture are provided.

Leaves: The shape, size, venation, margins, hairiness, color, arrangement on stem, etc.

Sori: The shape of the cluster of spore-bearing structures on fern fronds.

Inflorescence: Used in grass-sedge section descriptions to describe the flowers and stalks of grasses and sedges.

Flowers: The size, shape, color, kind of inflorescences and month of flowering.

Fruit: Type, color, number, size, and important diagnostic features.

Line Drawing: Important features are provided from illustrations in Hitchcock, et al (5 vol. set — 1955, 1959, 1961, 1964, 1969).

GLOSSARY OF TERMS

Achene — Small, dry 1-seeded fruit covered by ovary wall and free from the seed (i.e., grass).

Acuminate — Tapering to a long point.

Acute — Pointed at less than a right angle.

Alternate — Singly located at a node.

Apetalous — Without petals.

Aril — Pulpy outer covering of a seed as found on yew shrubs.

Auricle — An ear-like lobe on grasses at the leaf-culm juncture.

Awn (awned) — Bristle-like appendage on the back or top of glumes and lemmas of some grass spikelets.

Axil (axillary) — The angle between leaf and stem; the location of inflorescences in some forbs and shrubs.

Banner — The upper petal of a leguminaceous (pea-like) flower.

Beak — A narrow projection on some fruits.

Berry — Fleshy fruit with several seeds (i.e., grapes).

Biennial — A plant that takes two years to complete its development and usually blooms the second year.

Bipinnate — Twice pinnate.

Biternate — Twice ternate.

Blade — The expanded part of a leaf.

Bract — Modified leaf subtending (below) a flower or cluster of flowers.

Caespitose — Tufted, bunched.

Calyx — The sepals of a flower — collectively.

Capsule — Dry, dehiscent fruit of two or more chambers (carpels) usually containing many seed (i.e., Iris)

Catkin — Elongate, deciduous cluster of flowers (i.e., willows).

Caudex — The thickened, often woody base above the roots.

Cauline — Pertaining to the stem.

Ciliate — Containing hairs or bristles on the leaf margin.

Collar — The outer side of the leaf where the blade and sheath come together in grasses.

Compound — Composed of two or more parts; leaves — two or more leaflets.

Cordate — Heart-shaped.

Corolla — The petals of a flower — collectively.

Corymb — Rounded or flat-topped inflorescence; pedicels or floral branches are attached at intervals with the outer longest and the inner progressively shorter.

Culm — The flowering stem of a grass or sedge.

Cuneate — Wedge-shaped; as a leaf shape.

Cyme — Rounded or flat-topped inflorescence; pedicels or floral branches are often attached at a single point and radiate outward; oldest flowers terminate main axis.

Deciduous — Falling off at the end of a season of growth or life; nonevergreen.

Dehiscent — A fruit that splits open.

Dentate — Toothed; teeth acute and pointing outward on leaf margin.

Dioecious — Plants with unisexual flowers produced on separate plants (i.e., holly).

Drupe — Fleshy fruit with a single seed enclosed by a pit; a stone fruit (i.e., peach, cherry).

Entire — Leaf margin without teeth or indentations; continuously even.

Florets — The small flowers of grasses (consisting of palea, lemma, and included sexual parts).

Follicle — Dry fruit of one chamber (carpel) that splits on one side (i.e., milkweed, larkspur).

Forb — Herbaceous (nonwoody) plant with broad leaves that die back at the end of the growing season (excludes grasses and sedges).

Frond — The leaf of a fern.

Galea — The upper concave lip of a 2-lipped calyx or corolla (i.e., *Pedicularis* spp.)

Glabrous — Smooth, without hairs or glands.

Gland (glandular) — A hair that secretes nectar; having glands and stickiness.

Glaucous — Bluish, whitish, or grayish in color due to a coating of powdery or waxy particles.

Glumes — A pair of scale-like bracts enclosing the grass spikelet.

Head — Inflorescence of dense sessile flowers (i.e., composite).

Herbaceous — Non-woody plant with stems dying back at the end of the growing season (includes sedges and grasses).

Hip — The fruit of a rose; fleshy portion composed of receptacle, hypanthium, and the included achenes.

Imbricate — Overlapping like shingles on a roof.

Incised — Leaf margin; cut sharply, irregularly, and deeply.

Indehiscent — A fruit that does not split open.

Indusium — The structure that covers the sori of many ferns.

Inflorescence — The floral cluster of a plant; the arrangement of the flowers.

Involucre — A whorl of bracts below an inflorescence.

Keel (keeled) — A sharp crease or ridge (as on a boat); the lower petals of a leguminaceous (pea-like) flower.

Lanceolate — Elongate with curved sides and pointed end; widest part in middle.

Leaflet — One of the divisions of a compound leaf.

Legume — Dry, dehiscent fruit of one carpel (chamber) splitting at maturity along two sutures (i.e., pea).

Lemma — A bract enclosing the flower in the spikelet of a grass; sometimes awned.

Lenticels — Lens-shaped corky lines on the bark of some woody plants (i.e., cherry).

Merous — A suffix indicating the number of parts or floral organs.

Mesic — Moist (neither very wet nor very dry).

Monoecious — Having separate male and female flowers on the same plant (i.e., corn).

Mucronate — Apex of leaf with a short, sharp point.

Node — Point on a stem where leaves or branches are attached.

Nut — Dry, indehiscent fruit with a hard, bony shell and one-seed (i.e., walnut).

Oblanceolate — "Upside down" or inverted lanceolate; broadest above the middle.

Oblong — Elongate with parallel sides; length usually less than ten times the width.

Opposite — In pairs on either side of the node (leaves); inserted in front of the petals and opposite (stamens).

Orbicular — Circular in outline.

Ovate — Egg-shaped; broadest part below the middle.

Palatability — Relative use made by grazing or browsing animals (deer, elk, cattle, sheep, horses) usually related to degree of preferability and need. Unpalatable may reflect slight use rather than the plant being inedible. Varies by season, total plant composition available, and the local area.

Palmate — Three or more lobes or parts arising from a common point (as fingers on a hand).

Panicle — An elongate inflorescence with compound branching pattern.

Pappus — Hairs, bristles, scales, or awns arising from the achene of a composite flower.

Pedicel (Pedicellate) — The stalk of a single flower in an inflorescence.

Peduncle — The stalk of an inflorescence.

Perennial — A plant that lives for more than two years.

Petal — The white or colored part of the corolla that serves to attract pollinating insects.

Petiole (petiolate) — The stalk of a leaf.

Pinnae — The primary divisions of a pinnately compound leaf (i.e., fern).

Pinnate — Having parts arranged in two rows along a common axis (like a feather).

Pinnule — The leaflet on a pinna (ultimate leaf segment of a fern frond).

Pistillate — The female flower.

Pith — The soft spongy central cylinder in woody stems.

Pod — A dry, dehiscent fruit (not precise).

Pome — Fleshy fruit with a core (i.e., apple).

Prickles — Small, weak spines on the bark (i.e., raspberry).

Prostrate — Lying flat on the ground.

Prow — The forward part of a ship (describes *Poa* spp. leaf tips).

Pubescent — Covered with hairs.

Raceme — An elongate inflorescence with single pedicels along the axis; usually blooming from base to apex.

Rachis — The axis of a spike or a pinnately compound leaf.

Ray — The marginal flower in a head of a composite; often strap-like and colored or white.

Reniform — Kidney-shaped; broader than long, with rounded ends and a wide basal sinus.

Retrorse — Directed downward; bent backward.

Rhizome (rhizomatous) — A modified underground stem growing horizontally and developing new plants (i.e., Kentucky bluegrass).

Samara — Dry indehiscent fruit with one or more wings (i.e., maple).

Scape — A leafless flowering stalk above basal leaves.

Schizocarp — A fruit that splits into 1-seeded parts or chambers (i.e., carrot).

Sepal — The part of the calyx which is usually green and often leafy in texture.

Serrate — Leaf margin with fine, sharp teeth that are inclined upward.

Sessile — Flowers or leaves that lack a stalk.

Sheath — The portion of the leaf surrounding the culm.

Shrubs — A woody plant having several stems and lower in stature than a tree.

Sori — Clusters of sporangia on fern pinnae and fronds.

Spatulate — Oblong, broader at the upper end and with a rounded apex (like a spatula).

Spike — Elongated inflorescence of sessile flowers.

Spikelets — The florets and glumes of a grass.

Spine — A strong, sharp-pointed woody protrusion from the stem (i.e, rose).

Stamen — The pollen-producing part of the flower.

Staminate — The male flower.

Stellate — Star-shaped hairs on stems or leaves.

Stigma — The part of the pistil in a flower where pollen adheres and germinates.

Stipule — Leafy appendages that appear at the point of attachment of leaf and stem.

Stolon (stoloniferous) — A modified horizontal stem, above ground, that roots at the nodes developing new plants (i.e., strawberry).

Style — The stalk-like part of the pistil connecting the stigma to the ovary in a flower.

Sub-shrub — Somewhat shrubby though appearing herbaceous.

Tendril — A part of a stem modified into a slender, twining, holdfast structure (i.e., peavines, vetches).

Ternate — Arranged in three's.

Translucent — A fruit that is partially transparent.

Truncate — Base or apex of a leaf that is flattened as though cut-off.

Umbel — A flat-topped or rounded inflorescence having flowers on pedicels of equal length and attached to the summit of the peduncle (blooms outside inward).

Veins — Externally visible transporting tissue in a leaf.

Venation — The system or pattern of veins.

Whorl — A group of three or more parts at a node.

Wing — The lateral petals of a leguminaceous (pea-like) flower.

Xeric — Dry.

SPECIES LIST BY SCIENTIFIC NAME
SHRUBS

Scientific Name	Code	Common Name
Acer glabrum	ACGL	Rocky Mountain maple
Alnus incana (old-*tenuifolia*)	ALIN	Thinleaf alder
Alnus sinuata (old-*sitchensis*)	ALSI	Sitka alder
Amelanchier alnifolia (old-*florida*)	AMAL	Serviceberry
Arctostaphylos nevadensis	ARNE	Pinemat manzanita
Arctoshaphylos uva-ursi	ARUV	Bearberry, kinnikinnick
Artemisia tridentata spp. *vaseyana*	ARTRV	Mountain big sagebrush
Berberis repens	BERE	Creeping Oregon-grape
Ceanothus sanguineus	CESA	Redstem ceanothus
Ceanothus velutinus	CEVE	Snowbrush ceanothus
Cercocarpus ledifolius	CELE	Curlleaf mountain-mahogany
Chimaphila menziesii	CHME	Little pipsissewa
Chimaphila umbellata	CHUM	Prince's pine Western pipsissewa
Holodiscus discolor	HODI	Ocean spray
Linnaea borealis	LIBO2	Twinflower
Lonicera involucrata	LOIN	Bearberry honeysuckle
Lonicera utahensis	LOUT2	Utah honeysuckle
Menziesia ferruginea var. *glabella*	MEFE	Fool's huckleberry
Pachistima myrsinites	PAMY	Pachistima, Oregon boxwood
Phyllodoce empetriformis	PHEM	Pink mountain-heath
Physocarpus malvaceus	PHMA	Mallow ninebark
Purshia tridentata	PUTR	Bitterbrush
Ribes cereum	RICE	Squaw or wax currant
Ribes lacustre	RILA	Swamp gooseberry
Ribes viscosissimum	RIVI	Sticky currant
Rosa gymnocarpa	ROGY	Baldhip rose
Rosa nutkana var. *hispida*	RONUH	Nootka rose
Rosa woodsii var. *ultramontana*	ROWOU	Pearhip rose

Salix scouleriana	SASC	Scouler willow
Shepherdia canadensis	SHCA	Buffaloberry
Spiraea betulifolia (old-*lucida*)	SPBE	Birchleaf spiraea
Symphoricarpos albus	SYAL	Common snowberry
Symphoricarpos oreophilus	SYOR	Mountain snowberry
Taxus brevifolia	TABR	Pacific yew
Vaccinium membranaceum	VAME	Big huckleberry
Vaccinium scoparium	VASC	Grouse huckleberry

SPECIES LIST BY COMMON NAME
SHRUBS

Common Name	Code	Scientific Name
Baldhip rose	ROGY	*Rosa gymnocarpa*
Bearberry honeysuckle	LOIN	*Lonicera involucrata*
Bearberry, kinnikinnick	ARUV	*Arctoshaphylos uva-ursi*
Big huckleberry	VAME	*Vaccinium membranaceum*
Birchleaf spiraea	SPBE	*Spiraea betulifolia* (old-*lucida*)
Bitterbrush	PUTR	*Purshia tridentata*
Buffaloberry	SHCA	*Shepherdia canadensis*
Common snowberry	SYAL	*Symphoricarpos albus*
Creeping Oregon-grape	BERE	*Berberis repens*
Curlleaf mountain-mahogany	CELE	*Cercocarpus ledifolius*
Fool's huckleberry	MEFE	*Menziesia ferruginea* var. *glabella*
Grouse huckleberry	VASC	*Vaccinium scoparium*
Little pipsissewa	CHME	*Chimaphila menziesii*
Mallow ninebark	PHMA	*Physocarpus malvaceus*
Mountain big sagebrush	ARTRV	*Artemisia tridentata* spp. *vaseyana*
Mountain snowberry	SYOR	*Symphoricarpos oreophilus*
Nootka rose	RONUH	*Rosa nutkana* var. *hispida*
Ocean spray	HODI	*Holodiscus discolor*
Pachistima, Oregon boxwood	PAMY	*Pachistima myrsinites*
Pacific yew	TABR	*Taxus brevifolia*
Pearhip rose	ROWOU	*Rosa woodsii* var. *ultramontana*
Pinemat manzanita	ARNE	*Arctostaphylos nevadensis*
Pink mountain-heath	PHEM	*Phyllodoce empetriformis*
Prince's pine Western pipsissewa	CHUM	*Chimaphila umbellata*
Redstem ceanothus	CESA	*Ceanothus sanguineus*
Rocky Mountain Maple	ACGL	*Acer glabrum*

Scouler willow	SASC	*Salix scouleriana*
Serviceberry	AMAL	*Amelanchier alnifolia* (old-*florida*)
Sitka alder	ALSI	*Alnus sinuata* (old-*sitchensis*)
Snowbrush ceanothus	CEVE	*Ceanothus velutinus*
Squaw or wax currant	RICE	*Ribes cereum*
Sticky currant	RIVI	*Ribes viscosissimum*
Swamp gooseberry	RILA	*Ribes lacustre*
Thinleaf alder	ALIN	*Alnus incana* (old-*tenuifolia*)
Twinflower	LIBO2	*Linnaea borealis*
Utah honeysuckle	LOUT2	*Lonicera utahensis*

SPECIES LIST BY SCIENTIFIC NAME
GRASSES AND SEDGES

Scientific Name	Code	Common Name
Agropyron spicatum	AGSP	Bluebunch wheatgrass
Bromus carinatus	BRCA	Mountain brome
Bromus vulgaris	BRVU	Columbia brome
Calamagrostis rubescens	CARU	Pinegrass
Carex concinnoides	CACO	Northwestern sedge
Carex geyeri	CAGE	Elk sedge
Carex rossii	CARO	Ross sedge
Elymus glaucus	ELGL	Blue wildrye
Festuca idahoensis	FEID	Idaho fescue
Festuca occidentalis	FEOC	Western Fescue
Festuca viridula	FEVI	Green fescue
Koelaria cristata	KOCR	Prairie junegrass
Melica spectabilis	MESP	Purple oniongrass
Poa nervosa var. *wheeleri*	PONEW	Wheeler's bluegrass
Poa pretensis	POPR	Kentucky bluegrass

SPECIES LIST BY COMMON NAME
GRASSES AND SEDGES

Common Name	Code	Scientific Name
Blue wildrye	ELGL	*Elymus glaucus*
Bluebunch wheatgrass	AGSP	*Agropyron spicatum*
Columbia brome	BRVU	*Bromus vulgaris*
Elk sedge	CAGE	*Carex geyeri*
Green fescue	FEVI	*Festuca viridula*
Idaho fescue	FEID	*Festuca idahoensis*
Kentucky bluegrass	POPR	*Poa pretensis*
Mountain brome	BRCA	*Bromus carinatus*
Northwestern sedge	CACO	*Carex concinnoides*
Pinegrass	CARU	*Calamagrostis rubescens*
Prairie junegrass	KOCR	*Koelaria cristata*
Purple oniongrass	MESP	*Melica spectabilis*
Ross sedge	CARO	*Carex rossii*
Western fescue	FEOC	*Festuca occidentalis*
Wheeler's bluegrass	PONEW	*Poa nervosa* var. *wheeleri*

SPECIES LIST BY SCIENTIFIC NAME
FORBS

Scientific Name	Code	Common Name
Adenocaulon bicolor	ADBI	Trail plant, pathfinder
Anaphalis margaritacea	ANMA	Pearly everlasting
Anemone piperi	ANPI	Piper's anemone
Arenaria macrophylla	ARMA3	Bigleaf sandwort
Arnica cordifolia	ARCO	Heartleaf arnica
Arnica latifolia	ARLA	Mountain arnica
Asarum caudatum	ASCA3	Wild ginger
Aster conspicuus	ASCO	Showy aster
Cirsium vulgare	CIVU	Bull thistle
Clintonia uniflora	CLUN	Queen's cup, beadlily
Coptis occidentalis	COOC2	Goldthread
Cystopteris fragilis	CYFR	Brittle bladderfern
Disporum tracycarpum	DITR	Fairybells
Fragaria vesca	FRVE	Woods strawberry
Fragaria virginiana	FRVI	Broadpetal strawberry
Galium triflorum	GATR	Sweetscented bedstraw
Goodyera oblongifolia	GOOB	Rattlesnake plantain
Gymnocarpium dryopteris	GYDR	Oak fern
Hieracium albertinum	HIAL2	Western hawkweed
Hieracium albiflorum	HIAL	White hawkweed
Lathyrus lanszwertii	LALA2	Thick-leaved peavine
Lathyrus nevadensis var. *cusickii*	LANEC	Cusick's peavine
Lathyrus pauciflorus	LAPA2	Few-flowered peavine
Linanthastrum nuttallii	LINU	Linanthastrum
Lupinus caudatus	LUCA	Tailcup lupine
Lupinus laxiflorus	LULA2	Spurred lupine
Mitella pentandra	MIPE	Alpine mitrewort
Mitella stauropetala	MIST2	Side-flowered mitrewort
Osmorhiza chilensis	OSCH	Sweet cicely, sweetroot
Pedicularis racemosa	PERA	Sickletop lousewort
Polemonium pulcherrimum	POPU	Skunk-leaved polemonium
Polystichum munitum	POMU	Western swordfern
Pteridium aquilinum	PTAQ	Bracken fern

Pyrola asarifolia	PYAS	Pink wintergreen
Pyrola secunda	PYSE	Sidebells pyrola
Senecio triangularis	SETR	Arrowleaf groundsel
Smilacina racemosa	SMRA	False Solomon's seal
Smilacina stellata	SMST	Starry Solomon's seal
Streptopus amplexifolius	STAM	Twisted stalk
Thalictrum occidentale	THOC	Western meadowrue
Tiarella trifoliata var. *unifoliata*	TITRU	Coolwort foamflower
Trautvetteria caroliniensis	TRCA3	False bugbane
Valeriana sitchensis	VASI	Sitka valerian
Viola glabella	VIGL	Woodland violet
Viola orbiculata	VIOR2	Round-leaved violet
Viola purpurea	VIPU	Goosefoot violet

SPECIES LIST BY COMMON NAME
FORBS

Common Name	Code	Scientific Name
Alpine mitrewort	MIPE	*Mitella pentandra*
Arrowleaf groundsel	SETR	*Senecio triangularis*
Bigleaf sandwort	ARMA3	*Arenaria macrophylla*
Bracken fern	PTAQ	*Pteridium aquilinum*
Brittle bladderfern	CYFR	*Cystopteris fragilis*
Broadpetal strawberry	FRVI	*Fragaria virginiana*
Bull thistle	CIVU	*Cirsium vulgare*
Coolwort foamflower	TITRU	*Tiarella trifoliata* var. *unifoliata*
Cusick's peavine	LANEC	*Lathyrus nevadensis* var. *cusickii*
Fairybells	DITR	*Disporum tracycarpum*
False bugbane	TRCA3	*Trautvetteria caroliniensis*
False Solomon's seal	SMRA	*Smilacina racemosa*
Few-flowered peavine	LAPA2	*Lathyrus pauciflorus*
Goldthread	COOC2	*Coptis occidentalis*
Goosefoot violet	VIPU	*Viola purpurea*
Heartleaf arnica	ARCO	*Arnica cordifolia*
Linanthastrum	LINU	*Linanthastrum nuttallii*
Mountain arnica	ARLA	*Arnica latifolia*
Oak fern	GYDR	*Gymnocarpium dryopteris*
Pearly everlasting	ANMA	*Anaphalis margaritacea*
Pink wintergreen	PYAS	*Pyrola asarifolia*
Piper's anemone	ANPI	*Anemone piperi*
Queen's cup, beadlily	CLUN	*Clintonia uniflora*
Rattlesnake plantain	GOOB	*Goodyera oblongifolia*
Round-leaved violet	VIOR2	*Viola orbiculata*
Showy aster	ASCO	*Aster conspicuus*
Sickletop lousewort	PERA	*Pedicularis racemosa*
Sidebells pyrola	PYSE	*Pyrola secunda*
Side-flowered mitrewort	MIST2	*Mitella stauropetala*
Sitka valerian	VASI	*Valeriana sitchensis*
Skunk-leaved polemonium	POPU	*Polemonium pulcherrimum*
Spurred lupine	LULA2	*Lupinus laxiflorus*

Starry Solomon's seal	SMST	*Smilacina stellata*
Sweet cicely, sweetroot	OSCH	*Osmorhiza chilensis*
Sweetscented bedstraw	GATR	*Galium triflorum*
Tailcup lupine	LUCA	*Lupinus caudatus*
Thick-leaved peavine	LALA2	*Lathyrus lanszwertii*
Trail plant, pathfinder	ADBI	*Adenocaulon bicolor*
Twisted stalk	STAM	*Streptopus amplexifolius*
Western hawkweed	HIAL2	*Hieracium albertinum*
Western meadowrue	THOC	*Thalictrum occidentale*
Western swordfern	POMU	*Polystichum munitum*
White hawkweed	HIAL	*Hieracium albiflorum*
Wild ginger	ASCA3	*Asarum caudatum*
Woodland violet	VIGL	*Viola glabella*
Woods strawberry	FRVE	*Fragaria vesca*

Rocky Mountain Maple

Acer glabrum **ACGL**
Family — Aceraceae

Range: Usually found east of the Cascades in Washington and Oregon. Extends east to Idaho and western Montana where *A. glabrum* var. *douglasii* becomes more prevalent. Both varieties occur in the Blue and Wallowa Mountains.

Habitat: Moist seepage sites under grand fir and Douglas-fir communities. Indicates higher productivity sites in PSME/PHMA communities. Also occurs in riparian communities from low elevation canyon bottoms to mid-montane stream sides.

Look Alikes: Our only maple in eastern Oregon, but may be confused with *Ribes* spp. and ninebark. Leaves are opposite with maple and alternate with the look alikes.

Indicator Value: Indicates ABGR/ACGL and PSME/ACGL/PHMA plant associations.

Miscellany: Persists in open savanna as early to mid seral species in true fir communities. Used by Native Americans for fabricating vessels and smoking of meats. Browsed readily by deer and elk.



Rocky Mountain Maple

Acer glabrum **ACGL**

Habit: Deciduous shrub or small tree 3-33 feet tall.

Big Tree: Cornet Creek, Baker Ranger District (Wallowa-Whitman), 37 inch circumference.

Stems: Smooth, reddish-brown bark turning gray with age; buds opposite, red, ovate, often paired.

Leaves: Opposite, deciduous, simple, palmately lobed (3 to 5 main veins); 2-5 inches in diameter; dark green above (reddish tints) and paler below; petiole-green (var. *glabrum*) or red (var. *douglasii*) and same length as leaf blade.

Flowers: Small, greenish-yellow in axillary clusters (April - June).

Fruit: Double samara, 1 inch long, joined at acute or right angle.



Thinleaf Alder

***Alnus incana* (old-*tenuifolia*)** **ALIN**
Family — Betulaceae

Range: East of Cascade Crest to Rocky Mountains of Idaho and Montana.

Habitat: Indicates seepages and areas of high water table. Prevalent along streams and meadow margins at lower montane elevations.

Look Alikes: Readily confused with Sitka alder (*A. sinuata*) which has sharply pointed winter buds. Thinleaf alder has rounded, blunt buds.

Indicator Value: An early successional species beneath grand fir series plant associations or an inclusion in late seral stands where sub-irrigation occurs. Seep and water-logged sites within upland grand fir series plant associations. May indicate potential reforestation difficulty.

Miscellany: A nitrogen-fixing plant. Used by Native Americans as astringent and a tonic; a vegetable coloring; basketry and cordage. Low to moderately palatable to wild and domestic stock.



Thinleaf Alder

Alnus incana **ALIN**

Habit: A large shrub usually 15-20 feet tall which tends to be thicket-forming.

Stems: Hairy at first before maturing; grayish-brown; orangish lenticals on bark; branching is alternate.

Leaves: Deciduous; alternate; doubly serrate margin with acute or rounded tip; dull green color. Leaves average 2-4 inches with ½-1 inch long petioles.

Flowers: Catkins develop before leaves; male catkins are clustered and drooping; female catkins are small, conelike clusters on short stalks (April - May).

Fruit: Small, wingless nutlet enclosed in female catkins.



Sitka Alder

***Alnus sinuata* (old-*sitchensis*)** **ALSI**
Family — Betulaceae

Range: Cascade and Olympic Mountains eastward to Rocky Mountains of Montana and Idaho.

Habitat: Seepages beneath grand fir communities; common throughout subalpine fir communities defining cool, moist environments. Also prevalent at lower montane elevations as a riparian zone species.

Look Alikes: Easily confused with thinleaf alder (*A. incana*) which has rounded, blunt buds instead of sharply pointed buds of Sitka alder.

Indicator Value: Indicates early seral stages of subalpine fir series plant associations and wetter, cooler grand fir series plant associations. May indicate potential reforestation difficulty due to moisture table and coldness of site.

Miscellany: A nitrogen-fixing plant. Used by Native Americans as an astringent and tonic; a vegetable coloring; basketry and cordage. Low to moderately palatable to wild and domestic stock.



Sitka Alder

Alnus sinuata **ALSI**

Habit: A large shrub usually 10-20 feet tall which tends to form thickets.

Stems: Shiny brown to yellow brown; lenticels glandular; alternate branching.

Leaves: Deciduous; alternate; doubly serrate margin with acute tip; shiny green color. Leaves average 1-4 inches with ½-1 inch long petioles.

Flowers: Male catkins develop before leaves; female catkins develop with leaves (May - June); male catkins droop in a cluster; female catkins are semi-woody conelike structures on short stalks.

Fruit: Small, winged nutlet enclosed in female catkins.



Serviceberry

Amelanchier alnifolia **(old-*florida*)** **AMAL**
Family — Rosaceae

Range: Widespread throughout the Pacific Northwestern states.

Habitat: Typically on canyon slopes, open forest savannah, and as an early seral species in ponderosa pine-dominated woodlands.

Look Alikes: *Crataegus* spp. (hawthornes — thorned); *Prunus* spp. (cherries –– glands on petiole or leaf bases); *Spiraea* spp. (spiraea — venation and serration distinctive).

Indicator Value: Indicates early seral stages of ABGR/VAME, ABGR/SPBE. Present in later seral stages of Douglas-fir series plant associations.

Miscellany: Berries are edible. Native Americans dried berries into loaves for later use in soups and stews. Used today in jams, jellies, and wines. Browsed by deer, elk, sheep, and goats. Grouse use berries in summer and buds in winter. One of the first shrubs to flower in the canyons in early spring.



Serviceberry

Amelanchier alnifolia **AMAL**

Habit: Shrubs or small trees (5-20 feet).

Stems: Reddish brown aging grey; alternate branching.

Leaves: Deciduous; alternate; flattened or truncated at the base with coarse dentations on margins above the mid point of leaf; veins are strongly paralleling; blade is ½-1 inch long.

Flowers: White petals; racemes of 3 to 20 flowers (March - July).

Fruit: Globose pome; dark purplish; glabrous to glacous.



Pinemat Manzanita

Arctostaphylos nevadensis **ARNE**
Family — Ericaceae

Range: Cascades of Washington and Oregon eastward to the Blue Mountains.

Habitat: Early seral stands of ponderosa pine, lodgepole pine, and grand fir-dominated communities. Often increases on heavily logged areas.

Look Alikes: Bearberry; kinnikinnick (round leaf tips — bright red berry; more prostrate); twinflower and pachistima (opposite leaves with serrated margins).

Indicator Value: Indicative of sunny locations in high elevation grand fir communities where ponderosa pine, Douglas-fir, larch, and/or lodgepole pine may dominate. Regeneration of tree species in clearcuts with ARNE may be difficult.

Miscellany: Berries are eaten by wildlife; leaves boiled and used by Native Americans for curative teas, and smoked as a tobacco substitute. Plant is not used by browsing animals. The mat-forming characteristics of this species provides erosion control protection on highly disturbed sites. A fine ground cover for horticulturists. Used for jellies, cobblers, pies, and winemaking.



Pinemat Manzanita

Arctostaphylas nevadensis **ARNE**

Habit: Trailing evergreen shrub with rooting stems up to 10 inches tall.

Stems: Brownish to reddish with peeling bark.

Leaves: Evergreen; alternate; thick; 1 inch long, leathery; spatulate form with a sharp-pointed tip; dark green above.

Flowers: White to pinkish-white; urn-shaped; few-flowered terminal racemes (June - July).

Fruits: Round, brownish-red berry-like drupe.



Bearberry, Kinnikinnick

Arctoshaphylos uva-ursi **ARUV**
Family — Ericaceae

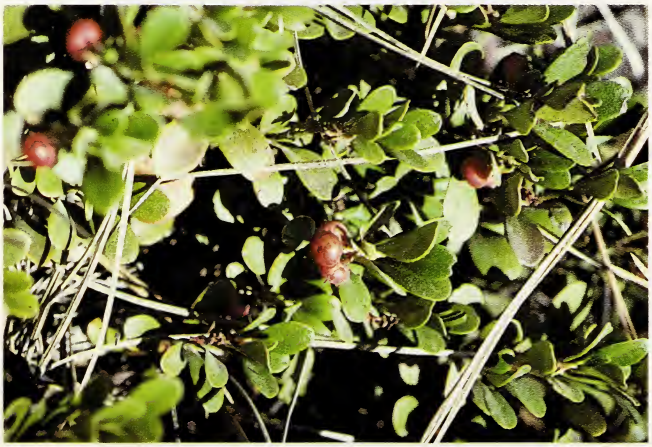
Range: Cascades throughout Oregon and Washington to the Rocky Mountains.

Habitat: Sunny stands of ponderosa pine, lodgepole pine, and grand fir-dominated communities. Common on sandy soils and glacial till in cool, moist canyon bottoms.

Look Alikes: Pinemat manzanita (pointed leaf tip; brown-red berry; more erect); Twinflower and pachistima (opposite leaves with serrated margins).

Indicator Value: Cool, moist grand fir communities, under lodgepole pine where cold air drainage occurs. Regeneration difficulty following logging of ARUV sites.

Miscellany: Berries edible by wildlife. Leaves used by Native Americans as a tobacco substitute, for a curative tea, and as a cider. Not palatable to browsing animals. Used today for jellies, cobblers, pies, and wines. Its mat-forming characteristics make it good for erosion control protection on highly disturbed sites and as a good garden ground cover.



Bearberry, Kinnikinnick

Arctostaphylos uva-ursi **ARUV**

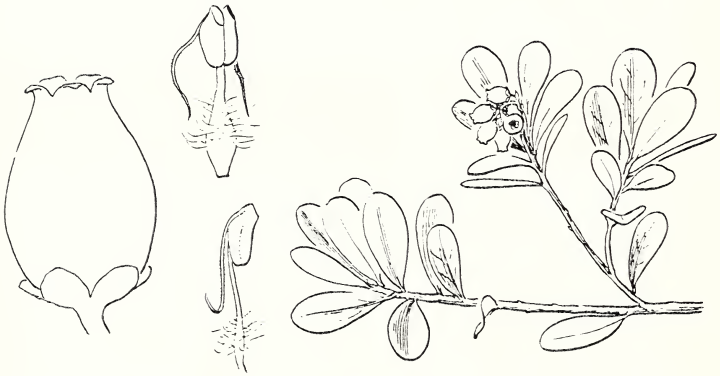
Habit: Trailing evergreen shrub with rooting stems up to 6 inches tall.

Stems: Brownish to reddish with shredding bark.

Leaves: Evergreen; alternate; thick and leathery; ½-1 inch long; spatulate with entire margins and a rounded tip; dark green above.

Flowers: White to pinkish; urn-shaped; few-flowered racemes (June - July).

Fruits: Round, bright red berry-like drupe.



Mountain Big Sagebrush

Artemisia tridentata* spp. *vaseyana **ARTRV**
Family Compositae

Range: Widespread in the Pacific Northwest at higher montane elevations east of the Cascades.

Habitat: Rocky and gravelly basaltic soils with special affinity to granitic substrates.

Look Alikes: Basin big sagebrush (inflorescences staggered on plant); Bitterbrush (leaves dark green — unhairy).

Indicator Value: Higher elevations of sagebrush shrublands or tree savanna where whitebark pine, subalpine fir, and lodgepole pine occur. Sites are generally unsuited for silvicultural practices. Severe tree regeneration difficulties.

Miscellany: Lightly used by deer. Native Americans use for shelter, cordage, basketry. Fruits can be used fresh, dried, or pounded into a meal.



Mountain Big Sagebrush

Artemisia tridentata* spp. *vaseyana **ARTRV**

Habit: Medium-sized aromatic shrubs usually 2-4 feet tall.

Stems: Silvery-gray in youth; becoming grayish brown; bark shreds on older stems; tends to root when branches touch ground.

Leaves: Deciduous and winter persistent leaves; alternate; ½-1½ inch long; cuneate (triangular); 3-lobed apex; silvery green above and below; strong scented.

Flowers: Small, yellow; tubular (August - September).

Fruits: Small achene.



Creeping Oregon-Grape

Berberis repens **BERE**

Family — Berberidaceae

Range: Eastern Washington and eastern Oregon in the Pacific Northwest.

Habitat: Drier, well-drained sites often on steep montane or canyon slopes.

Look Alikes: Tall Oregon grape (*B. aquifolium*) — leaflets 7 to 9; longer leaflets; glossy and lighter in color.

Indicator Value: Found over a wide range of plant associations (ABGR/CLUN, ABGR/LIBO2) to (PIPO/SYAL and PIPO/FEID). Best represented in the PSME series and in spiraea-dominated communities (ABGR/SPBE, PSME/SPBE).

Miscellany: Native Americans used the berries for food; roots for yellow dye, and its alkaloid (berberine) as a cure for stomach and bowel disorders. Berries are good raw, cooked for jelly, or made into wine. Young leaves palatable to deer. The State flower of Oregon is *B. aquifolium.*



Creeping Oregon-Grape

Berberis repens **BERE**

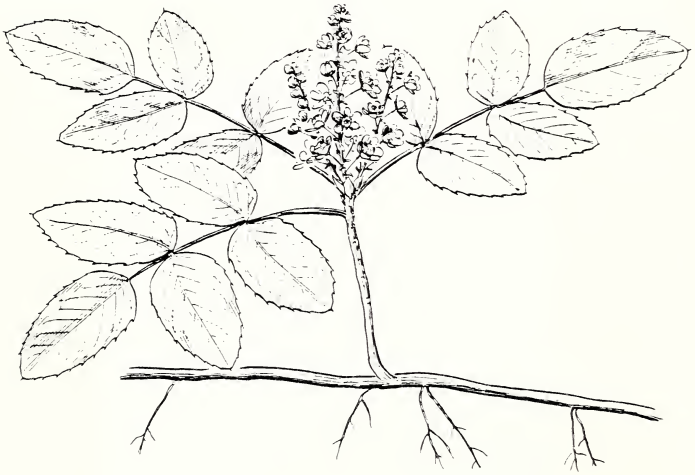
Habit: Low, creeping shrub usually less than 12" high.

Stems: Rhizomatous, often forming dense patches.

Leaves: Evergreen, alternate, pinnately compound with 5 to 7 leaflets. Margins are "holly-like" with spinose teeth. Leaflets are less than twice as long as broad, dull green, and usually non-glossy above.

Flowers: Buttery yellow, bunched into racemes (March - June).

Fruits: Dark blue berries with a glaucous dusting.



Redstem Ceanothus

Ceanothus sanguineus **CESA**
Family — Rhamnaceae

Range: Widespread from the Cascades to the Rocky Mountains in the Pacific Northwest.

Habitat: Well drained soils in openings as a result of fire.

Look Alikes: *C. velutinus* — (snowbrush ceanothus — evergreen, very shiny leaves); *Cornus stolonifera* — (red-osier dogwood — opposite leaves).

Indicator Value: Commonly found in Douglas-fir series vegetation (especially as an early seral member of PSME/PHMA plant association).

Miscellany: A nitrogen-fixing plant; important browse for deer and elk; fire seral species — promoted by forest fires.



Redstem Ceanothus

Ceanothus sanguineus **CESA**

Habit: Erect, loosely branched shrub (3-10 feet tall) tending to form thickets.

Stems: Smooth, purplish-red, alternately branched.

Leaves: Deciduous, alternate, dark green, and glabrous above, pale below; 1- 4 inches long with serrated margins on a 1 inch petiole. Three main veins branch from leaf base.

Flowers: White, small, clustered in dense panicles (May - June).

Fruit: Small, hard, 3-celled capsule which explodes seed following fire scarification.



Snowbrush Ceanothus

Ceanothus velutinus **CEVE**
Family — Rhamnaceae

Range: Widespread in mountainous Pacific Northwest.

Habitat: Open, sunny slopes typically on fire-frequented, early seral sites. Commonly occurs on glacial till where fire has frequented.

Look Alikes: Redstem ceanothus: deciduous with reddish stems.

Indicator Value: Commonly occurs in early seral vegetation beneath ponderosa pine, Douglas-fir, and western larch pertaining to grand fir series plant associations. Very aggressive following conflagration fires and hot clearcut-burns.

Miscellany: A nitrogen-fixing plant. Seeds require scarification in order to germinate. Flowers make a soapy lather when crushed in water and provide a fragrance and softness to the skin after washing. Leaves used by Native Americans for tobacco, tea, and red dye. Palatiblity is low.



Snowbrush Ceanothus

Ceanothus velutinus **CEVE**

Habit: Very aromatic, erect shrub (2-10 feet tall).

Stems: Green, smooth bark, alternately branched.

Leaves: Evergreen, alternate, thick, very glossy or shiny dark green above, paler below. Three main veins branch from leaf base. Edges often curl downward.

Flowers: Small, white, in dense pyramidal shaped racemes (June - August).

Fruits: Small capsule containing 3 seeds explodes following intense heat.



Curlleaf Mountain-Mahogany

Cercocarpus ledifolius **CELE**
Family — Rosaceae

Range: Southern and eastern Oregon extending through southeastern Washington to the Rockies.

Habitat: Warm, dry rocky ridges and rim outcroppings.

Look Alikes: Quite distinctive.

Indicator Value: Defines important forest edge where sites are too droughty and severe for suitable silviculture. Soils are too shallow or too rocky. Ponderosa pine and juniper may be associated.

Miscellany: Important deer winter range species. A good place to find the big buck is in thickets of curlleaf mountain-mahogany. Wood used for fuel and smoking of meats by Native Americans. They also used leaves for a laxative, inner bark for pulmonary problems, and wood for arrow shafts and digging implements due to its hardness and strength. A red dye was made from bark and roots.



Curlleaf Mountain-Mahogany

Cercocarpus ledifolius **CELE**

Habit: Evergreen shrub generally 15 feet tall and occasionally 40 feet tall and treelike.

Big Tree: 37 inch circum; 20 feet tall — La Grande Ranger District, (Wallowa-Whitman).

Stems and Bark: Reddish-brown becoming grayish-brown in age. Bark is grayish-brown with rough, deeply furrowed bark and plate-like scales.

Leaves: Evergreen, alternate, ½-1 inch long; dark green on upper surface with pale, pubescent underside. Thick and leathery with blade edges curling under.

Flowers: Greenish-white, inconspicuous, in axillary clusters (April - June).

Fruit: Narrow achene with distinctive curled, long, twisted plume.



Little Pipsissewa

Chimaphila menziesii **CHME**
Family — Ericaceae

Range: Widespread in the Pacific Northwest.

Habitat: A cool, moist, mid to high elevation shade-tolerant plant.

Look Alikes: Prince's pine (*C. umbellata*) — usually more than 3 flowers, shiny green oblanceolate leaves.

Indicator Value: Cool, moist, shaded communities in ABGR/ACGL, ABGR/LIBO2, ABGR/CLUN. May extend into ABLA2 zone.

Miscellany: Roots and leaves when boiled and cooled provide a refreshing drink.



Little Pipsissewa

Chimaphila menziesii **CHME**

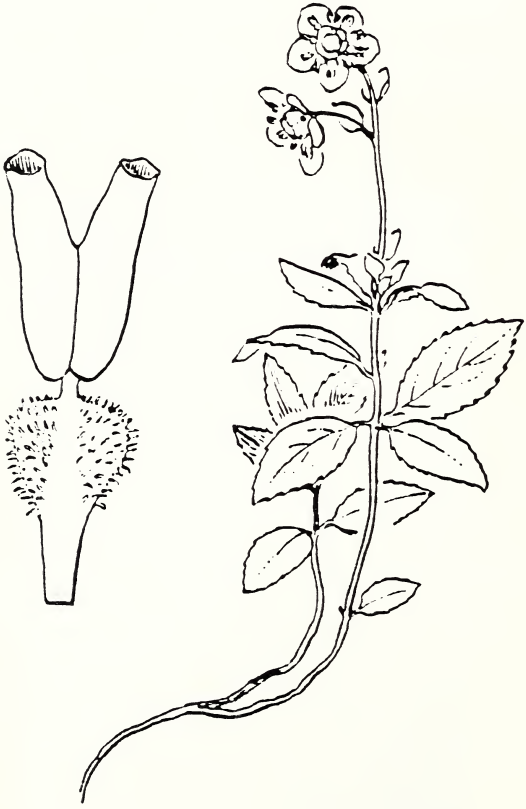
Habit: Small, erect rhizomatous sub-shrub usually less than 6" tall.

Stems and Bark: Unbranched, glabrous with woodyish base; may be reddish.

Leaves: Evergreen, simple, alternate 1-2 inches long, dull green to bluish-green; serrated margins; widest below the middle.

Flowers: Waxy, white to pinkish-white, solitary to 3 in number. (June - August).

Fruit: Rounded 5-celled capsule.



Prince's Pine, Western Pipsissewa

Chimaphila umbellata **CHUM**
Family — Ericaceae

Range: Widespread throughout mountains of Pacific Northwest.

Habitat: Mid to high elevation cool, moist sites that may be shady or exposed.

Look Alikes: Little pipsissewa (*C. menziesii*) — usually less than 3 flowers, dull green to blue-green elliptic leaves.

Indicator Value: Cool, moist communities in ABGR, ABLA2, and TSME plant associations.

Miscellany: Roots and leaves boiled for refreshing drink when chilled; used as an ingredient for root beer. Used by pharmaceutical companies for its astringent properties. Unpalatable.



Prince's Pine, Western Pipsissewa

Chimaphila umbellata **CHUM**

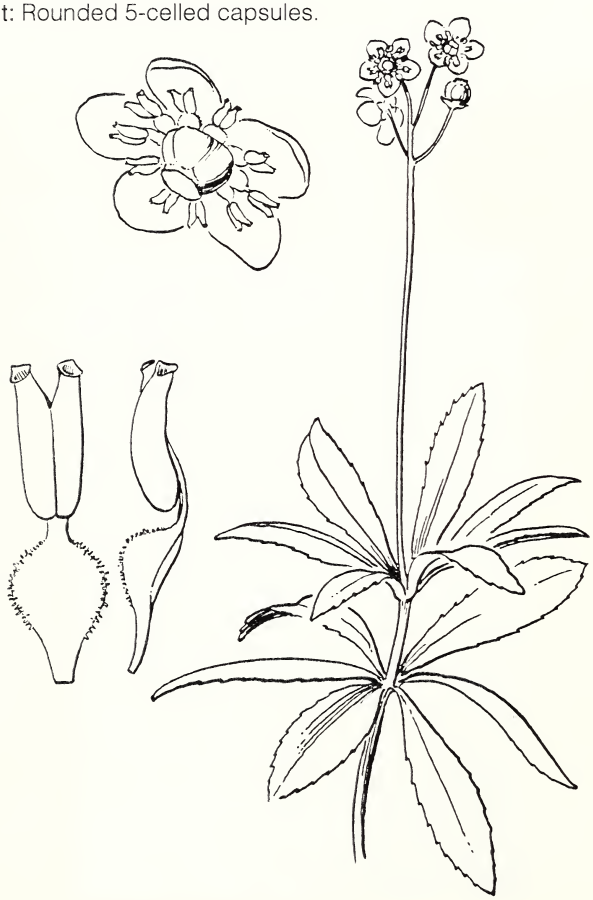
Habit: Small, erect rhizomatous sub-shrub usually 4-12 inches tall.

Stems and Bark: Unbranched, glabrous, woodyish base; yellowish-green.

Leaves: Evergreen, simple, alternate, 2-3 inches long, bright green, oblanceolate, whorled, serrated margins.

Flowers: Waxy, whitish-pink to pink, 3 to 15 in clustered racemes (June - August).

Fruit: Rounded 5-celled capsules.



Ocean Spray

Holodiscus discolor **HODI**
Family — Rosaceae

Range: Widespread throughout the Pacific Northwest

Habitat: Open rocky or gravelly colluvial slopes and beneath warm, dry tree species (ponderosa pine, Douglas-fir) in open forested stands.

Look Alikes: Possibly confused with *Ribes* spp. or ninebark when not in flower. Leaf margins are distinctive. Look for old dried inflorescences from previous year. Bark does not shred.

Indicator Value: Often associated with ninebark. Helps define PSME/PHMA and PSME/ACGL/PHMA communities in Wallowas and Northern Blue Mountains and PIPO-PSME/HODI-SYAL in the Northern Blues.

Miscellany: Resprouts basally following fire and increases with disturbance. Fruits were consumed by Native Americans. Other common name is Indian arrowwood — due to use of the hardwood of branches for arrow shafts. May be heavily browsed on winter ranges.



Ocean Spray

Holodiscus discolor **HODI**

Habit: An erect, multi-branched mid-sized shrub (3-9 feet tall) with vaselike form.

Stems and Bark: Grayish-red color; young stems ridged, older bark shreds.

Leaves: Alternate, deciduous, 1-3 inches long with triangular shape and truncated base; margins are shallowly lobed with coarse teeth; pale green above and white-hairy below.

Flowers: Small, creamy to white; borne in dense, large pyramidal panicles that often droop in a "spray;" old dried inflorescences usually overwinter (July - August).

Fruit: Small 1-seeded achenes.



Twinflower

Linnaea borealis **LIBO2**
Family — Caprifoliaceae

Range: Circumboreal; prevalent in forests of the Pacific Northwest.

Habitat: A cool, moist forested plant preferring ashy soils. Occurs in partial shade, but prefers dark, densely canopied forest overstory cover.

Look Alikes: Leaves could be mistaken for wintergreens (*Pyrola* spp.) or bearberry (*Arctostaphylos* spp.). Twinflower has opposite leaves.

Indicator Value: Important indicator of cool, moist, dark grand fir and subalpine fir plant associations (ABLA2/CLUN, ABLA2/LIBO2, ABGR/CLUN, ABGR/LIBO2, ABGR/TABR/CLUN).

Miscellany: A good horticultural ground cover. Unpalatable. Often increases with light disturbance following logging. The generic name is in honor of Carolus Linnaeus of Sweden — the father of the binomial plant classification system. This was his favorite flower.



Twinflower

Linnaea borealis **LIBO2**

Habit: Trailing sub shrub

Stems and Bark: Slender, woody stems less than 5 inches tall.

Leaves: Opposite on short petioles, evergreen, leathery, elliptic, ½ inch lustrous green; shallow teeth near leaf apex.

Flowers: Pinkish to white, paired, nodding bell-shaped on slender flower stalks (June - September).

Fruit: Small, 1-seeded capsules.



Bearberry Honeysuckle

Lonicera involucrata **LOIN**
Family — Caprifoliaceae

Range: Throughout forests of Pacific Northwest.

Habitat: Cool, moist to cold, wet sites at higher elevations.

Look Alikes: Utah honeysuckle (*L. utahensis*) — red, twin berries

Indicator Value: Indicates cold, wet or cool, moist spruce and subalpine fir sites.

Miscellany: Berries may be eaten raw or dried; browsed by elk and deer; berries eaten by grouse and bear.



Bearberry Honeysuckle

Lonicera involucrata **LOIN**

Habit: Erect mid-tall shrub (up to 12 feet); thicket forming.

Stems and Bark: Yellowish or grayish-brown; shredding older bark

Leaves: Opposite, deciduous, up to 5 inches long, elliptical, dark green above, paler below; entire margins with acute apex.

Flowers: Yellow to reddish-yellow in pairs; glandular-pubescent; subtended by large bracts that become red at fruiting time (June - August).

Fruit: Paired purple to black berries ¼ inches in diameter.



Utah Honeysuckle

Lonicera utahensis **LOUT2**
Family — Caprifoliaceae

Range: Throughout Pacific Northwest except for Oregon Coast Range.

Habitat: Moist, cool sites in grand fir and subalpine fir zones. More widespread than *L. involucrata,* but not very abundant.

Look Alikes: Very commonly mistaken for snowberries, but habitats do not usually overlap. Utah honeysuckle has broader, longer, darker leaves with red fruits.

Indicator Value: Occurs with *A. glabrum* in ABGR/ACGL and PSME/PHMA/ACGL. Defines true fir potential sites.

Miscellany: Leaves used by Native Americans for colds and sore throats; berries are edible; used by deer and elk — low in palatability.



Utah Honeysuckle

Lonicera utahensis **LOUT2**

Habit: Low to mid-sized shrub with few erect branches (3-5 feet tall).

Stems and Bark: Dull gray with solid white pith.

Leaves: Opposite, deciduous, elliptic to ovate, green to dark green, 1-2 inches long.

Flowers: Light yellow, paired, tubular corolla, 1 inch long (May - July).

Fruit: Paired, shiny red united berries (¼ inch).



Fool's Huckleberry

***Menziesia ferruginea* (var. *glabella*)** **MEFE**
Family — Ericaceae

Range: Widespread in Pacific Northwest; occasional in Seven Devils and adjacent Oregon.

Habitat: Defines cold, wet sites on gentle slopes and cornice sites on steep north aspects at high elevation locations.

Look Alikes: Rhododendron albiflorum (white azalea-like flowers); *Ledum glandulosam* (evergreen, rolled leaf margins); *Vaccinium membranaceum* (alternate leaves without whorled appearance).

Indicator Value: Defines ABLA2/MEFE plant association.

Miscellany: Low in palatability; poisonous to livestock if used in quantity.



Fool's Huckleberry

Menziesia ferruginea **MEFE**

Habit: Deciduous, straggling shrub, up to 6 feet tall; usually reclined downslope on steep cornice sites forming dense thickets.

Stems and Bark: Yellow-tan, pubescent new twigs; gray-reddish brown older stems and shredding bark.

Leaves: Alternate (appearing whorled); deciduous ovate to elliptic (2 inches long); thin; dull light green to glaucous green; brownish, glandular hairs with finely serrated margins. Mid vein protrudes from leaf tip.

Flowers: White to pinkish white; urn-shaped; borne in clusters (June - July).

Fruit: Many-seeded ovoid capsule.



Pachistima, Oregon Boxwood

Pachistima myrsinites **PAMY**
Family — Celastraceae

Range: Throughout the Pacific Northwest.

Habitat: Usually in open or shaded, well-drained soils. Also occurs on ash soils at higher montane elevations.

Look Alikes: *Arctostaphylos* spp. (alternate, entire leaves).

Indicator Value: Early seral grand fir communities (especially with big huckleberry, twinflower, queen's cup).

Miscellany: Excellent for horticulturists; may be shaped into hedges. Used for backdrop in floral arrangements. Deer and elk relish the plant. The specific name *myrsinites* means "Myrtle-like." Another common name is myrtle boxwood.



Pachistima, Oregon Boxwood

Pachistima myrsinites **PAMY**

Habit: Low growing (up to 2 feet tall) evergreen shrub

Stems and Bark: Reddish-brown and ridged to 4-angles.

Leaves: Opposite, evergreen, dark green, glossy, oblanceolate, serrated, thick and leathery.

Flowers: Maroon, small, borne in axillary clusters (April - June).

Fruit: Small, white aril covering dark brown seeds.



Pink Mountain-Heath

Phyllodoce empetriformis **PHEM**
Family — Ericaceae

Range: High mountains of the Pacific Northwest.

Habitat: Alpine and subalpine sites on well-drained soils.

Look Alikes: *Cassiope mertensiana* (scale leaves and white flower); *P. glanduliflora* (yellow-white flower).

Indicator Value: Indicates cold environments in subalpine fir and whitebark pine zones where regeneration and revegetation will be difficult at best.

Miscellany: Unpalatable plant. Attractive in its natural setting.



Pink Mountain-Heath

Phyllodoce empetriformis **PHEM**

Habit: Matted evergreen shrub (4-20 inches tall).

Stems and Bark: Fine, short, hairy in youth, becoming glabrous.

Leaves: Alternate, evergreen, linear needle-like, ½ inch long, grooved beneath and rolled under (to help reduce transpiration).

Flowers: Deep pinkish-rose, bell-shaped, and clustered at stem tips (June - August).

Fruit: Ovoid 5-valved capsule.



Mallow Ninebark

Physocarpus malvaceus **PHMA**
Family — Rosaceae

Range: Central and eastern Washington and Oregon to northern and central Rockies.

Habitat: Canyon slopes and bottoms beneath ponderosa pine and Douglas-fir as well as on nonforested shrubland sites.

Look Alikes: *Halodiscus discolor* (ocean spray — leaves not palmately lobed like a maple); *Ribes viscosissimum* (sticky current - leaves sticky).

Indicator Value: Defines PSME/ACGL/PHMA and PSME/PHMA plant associations.

Miscellany: Low palatability, browsed sporadically; severe regeneration difficulty; vigorous and aggressive following fire.



Mallow Ninebark

Physocarpus malvaceus **PHMA**

Habit: Erect, loosely branched mid to tall shrub (up to six feet tall).

Stems and Bark: Reddish to grayish-brown with loose, shredding bark.

Leaves: Alternate, deciduous, maple-like with 3 palmate lobes; 1-2½ inches; margins doubly serrate; stellate hairs on underside; petiole — ¾ inch long.

Flowers: Small, white, borne in terminal corymbs (May - July).

Fruit: Paired, many seeded hairy follicles.



Bitterbrush

Purshia tridentata **PUTR**
Family — Rosaceae

Range: East of Cascades in Washington and Oregon and northern California and eastward to western Montana, Wyoming, and Colorado.

Habitat: Sandy, gravelly and rocky soils in cold desert shrublands and beneath ponderosa pine at the forested fringe on warm dry sites.

Look Alikes: Sagebrushes (*Artemisia* spp.) — silvery, hairy leaves and odoriferous.

Indicator Values: Steppe: PUTR/AGSP; PUTR/FEID-AGSP

Forest: PIPO/PUTR/CARO/ PIPO/PUTR/AGSP

Miscellany: Extremely important winter range browse species for deer, antelope, and elk. Highly palatable plant. Regeneration problems; sensitive to fire; needs moist soils or precipitation following fire to resprout. Used by Native Americans for firewood. Seeds are "bitter." Rodents cache or eat seeds in great quantities. Sprouts from branch contact with ground. The specific name "*tridentata*" refers to the three-lobed leaf.



Bitterbrush

Purshia tridentata **PUTR**

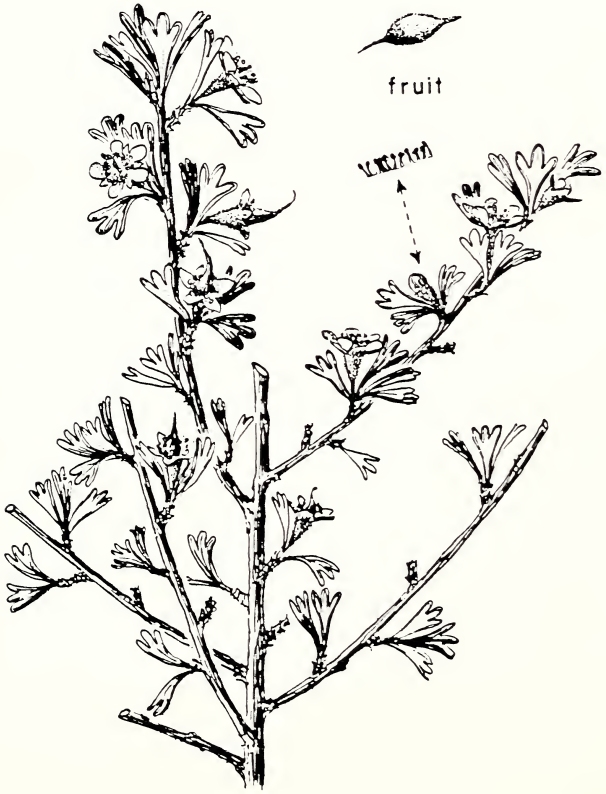
Habit: Erect, stiff and abundantly branched mid shrub up to 8 feet tall (usually less than 5 feet tall). Free branching form is usually replaced by globose, compact form from severe hedging by animals.

Stems and Branches: Reddish-brown becoming gray-reddish brown; spur shoots common (bitter to taste).

Leaves: Alternate, deciduous; wedge-shaped (¾ inch long); clustered on spur shoots; green to gray-green above, white to gray pubescent below; margins rolled under; 3-lobed apex.

Flower: Pale yellow, borne singly (April - June).

Fruit: Tear-shaped achene with tapered beak (bitter to the taste).



Squaw or Wax Currant

Ribes cereum **RICE**

Family — Grossulariaceae

Range: East slopes of Cascades and eastward to Rocky Mountains.

Habitat: Forest fringe or "edge" on warm, dry sites.

Look Alikes: Due to leaf size and shape it is fairly recognizable.

Indicator Value: A good indicator of non-suitable timberland; defines the warm, dry extreme of the Blue-Wallowa Mountain forests; regeneration difficult.

Miscellany: Berries are edible but best used in jellies. Perhaps our most attractive currant — especially with fruits. The specific name "*cereum*" refers to the waxy leaf surface. Low palatability.



Squaw or Wax Currant

Ribes cereum **RICE**

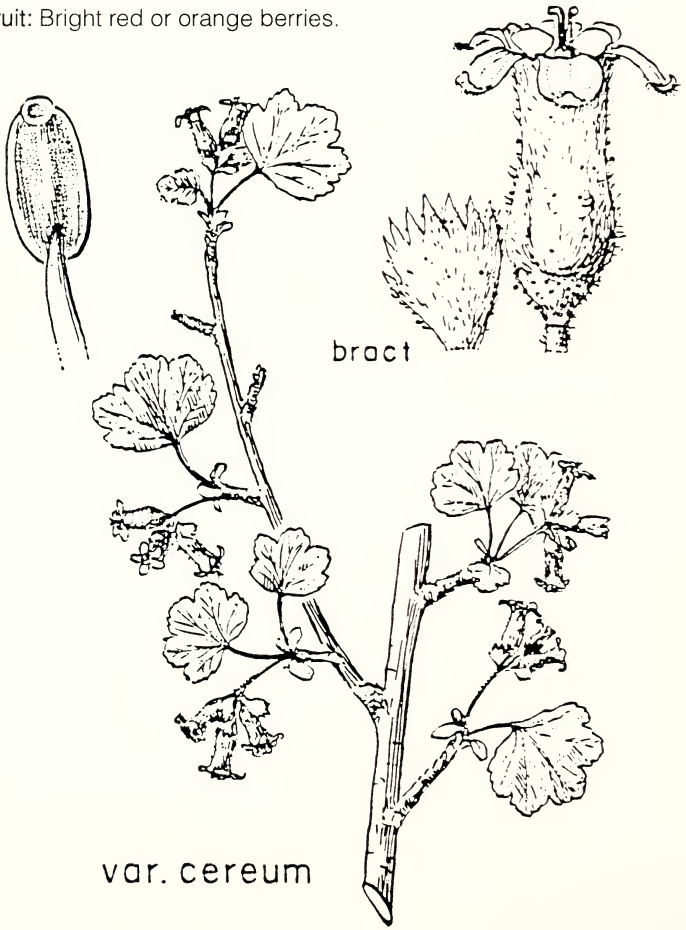
Habit: Stiff, multi-branched mid-size shrub (up to 5 feet tall).

Stems and Bark: Unarmed; grey to reddish brown.

Leaves: Alternate, deciduous, very small (less than 1¼ inch in diameter), waxy upper surface; double serrate; indistinctly 3 to 5 lobed.

Flowers: Greenish-white, tubular; glandular; borne in drooping clusters of 3 to 5 (April - June).

Fruit: Bright red or orange berries.



Swamp Gooseberry

Ribes lacustre **RILA**
Family — Grossulariaceae

Range: Common throughout the west.

Habitat: Cool, moist to wet forests and openings in the forest.

Look Alikes: Could be confused with other *Ribes* spp. that are armed; glossy deeply incised maple-like leaves are fairly diagnostic.

Indicator Value: Indicates true fir series plant associations (especially associated with queen's cup, twinflower, and big huckleberry).

Miscellany: The principal *Ribes* eradicated as host for white pine blister rust; unpalatable; fruits used for jellies or jams. Our most common gooseberry.



Swamp Gooseberry

Ribes lacustre **RILA**

Habit: Erect, loosely branched mid-size shrub (up to 6 feet tall).

Stems and Bark: Armed with spines at nodes and prickles in between; smooth reddish-brown.

Leaves: Alternately deciduous, maple-like (5-lobed) — up to 2 inches wide; deeply incised and serrate margin; glossy upper surface, velvety underside.

Flowers: Yellowish-green to pinkish white; saucer-shaped calyx; drooping racemes of 7-15 (April - July).

Fruits: Purple-black berry with glandular hairs, edible.



Sticky Currant

Ribes viscosissimum **RIVI**
Family — Grossulariaceae

Range: East side of Cascades to the Rocky Mountains.

Habitat: Moist, warm and moist, cool sites in grand and subalpine fir plant communities.

Look Alikes: Ninebark (*Physocarpus malvaceus*) — non-glandular leaves are finer toothed; Other unarmed *Ribes* spp — leaves will be nonglandular; shaped differently.

Indicator Values: Increases following tree overstory removal, especially in clearcuttings where soil is scarified. Pioneers after burns at higher elevations.

Miscellany: Alternate host for white pine blister rust. Unpalatable to animals; berries are not edible.



Sticky Currant

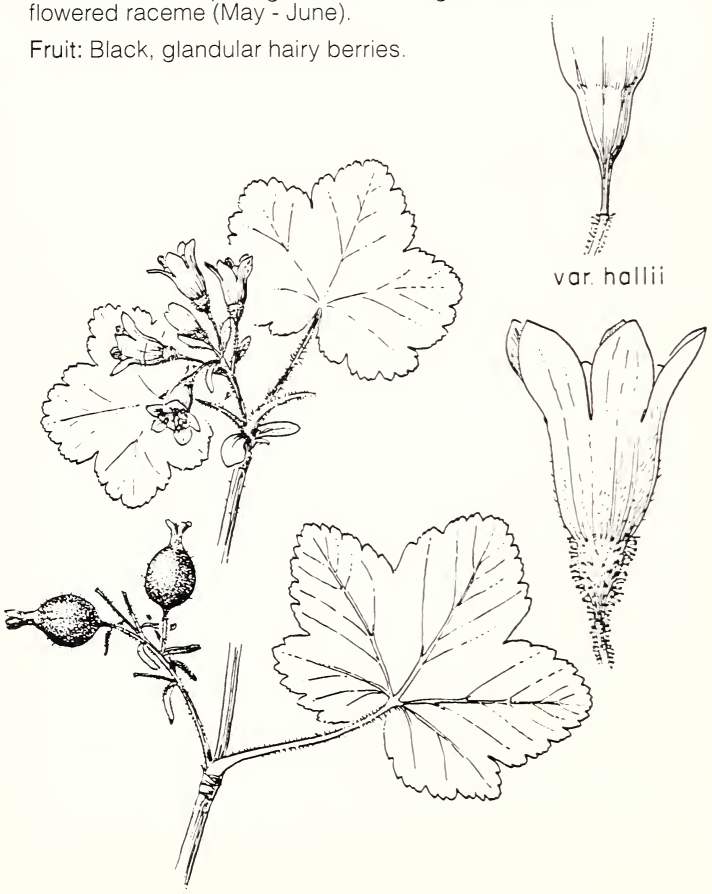
Ribes viscosissimum **RIVI**

Habit: Erect to spreading; rather straggly; mid-size shrub (up to 5 feet tall).

Stems and Bark: Unarmed; hairy and glandular at youth — aging reddish-brown and glaucous; bark shreds.

Leaves: Alternate, deciduous; maple-like; 3 to 5 lobed — 3 inches wide; coarsely toothed; sticky soft hairiness to both sides of leaves.
Flowers: Bell-shaped; greenish-white; glandular; borne in a 3 to 8 flowered raceme (May - June).

Fruit: Black, glandular hairy berries.



Baldhip Rose

Rosa gymnocarpa **ROGY**
Family — Rosaceae

Range: Widespread in Pacific Northwest; absent from much of Idaho.

Habitat: Cool, moist sites in grand fir series plant associations (especially with LIBO2 and CLUN); also found on moist microsites in Douglas-fir communities.

Look Alikes: Other *Rosa* spp. — this is the only rose with prickles and no spines.

Indicator Value: Defines the grand fir series plant associations and moist end of Douglas-fir zone.

Miscellany: The fruits (hips) are good for use in teas; important source of Vitamin C; petals of flowers are pleasant to taste — use in salads; low in palatability. Sepals of the flower fall as ovary matures and leave a "bald" hip in fruit.



Baldhip rose

Rosa gymnocarpa **ROGY**

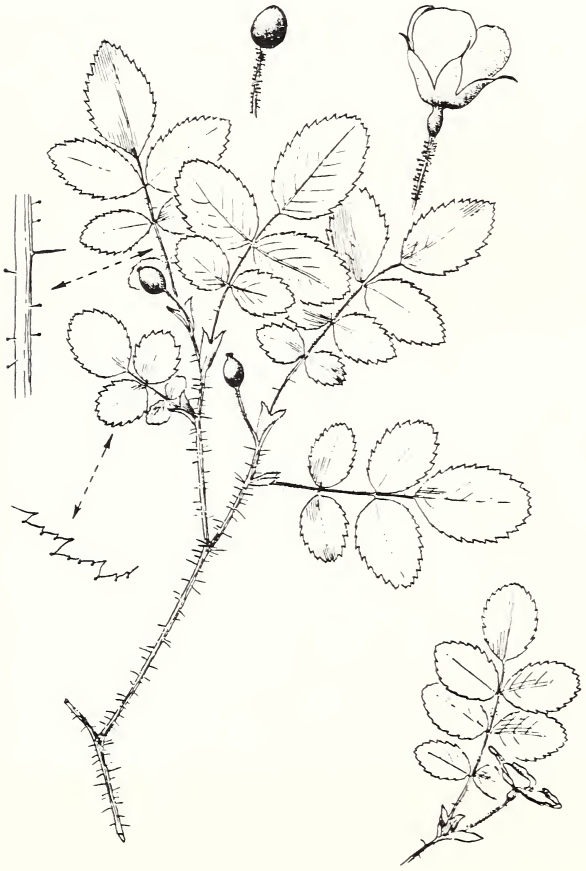
Habit: Erect, slender, finely branched low shrub (up to 3 feet tall).

Stems and Bark: Armed with many fine prickles (like a raspberry) - reddish.

Leaves: Alternate, deciduous, odd-pinnately compound; 5 to 7 leaflets; doubly serrate.

Flowers: Small (1 inch); pink to rose; borne singly (June - July).

Fruit: Small (½ inch) ovoid hips (green turning red).



Nootka Rose

Rosa nutkana* var. *hispida **RONUH**
Family — Rosaceae

Range: Cascades to the Rockies in the Pacific Northwest.

Habitat: Typically mixed with *R. woodsii* at lower limits on warmer, drier sites. Occurs on warmer, drier sites than *R. gymnocarpa*. May hybridize with *R. woodsii*.

Look Alikes: Very similar to *R. woodsii* which has smaller flowers in terminal clusters.

Indicator Value: Found in Douglas-fir and ponderosa pine open forestlands. Also occurs as the common rose species in SYAL-ROSA and ninebark shrublands.

Miscellany: Rose hips are used in jellies and teas. A good source of Vitamin C. Plant is low in palatability. Hips are important winter food for grouse and quail.



Nootka Rose

Rosa nutkana var. hispida **RONUH**

Habit: Erect, low to mid-sized shrub (2-6 feet tall)

Stems and Bark: Armed with pairs of straight to slightly curved spines.

Leaves: Alternate, deciduous, odd-pinately compound (5 to 7 leaflets); serrate to doubly serrate; teeth gland tipped.

Flowers: Large (2-3 inches); solitary at branch end; pink (May - July).

Fruit: Large purplish-red hip with sepals remaining on the hip at fruiting time.



Pearhip Rose

Rosa woodsii* var. *ultramontana **ROWOU**
Family — Rosaceae

Range: Widespread east of the Cascades.

Habitat: Warm, dry sites typically mixed with *R. nutkana* and perhaps hybridizing.

Look Alikes: Very similar to *R. nutkana* which has a solitary larger flower.

Indicator Value: Found in PIPO and PSME dominated forests on more moist sites than *R. nutkana*. It is common with ninebark and snowberry.

Miscellany: Rose hips are a valuable source of Vitamin C; used in jellies and teas. Plant is low in palatability. Hips are used by bear, grouse, and quail.



Pearhip Rose

Rosa woodsii* var. *ultramontana **ROWOU**

Habit: Erect, low to mid-sized shrub (3-7 feet tall).

Stems and Bark: Armed with stout, straight to slightly curved spines.

Leaves: Alternate, deciduous, odd-pinnately compound (5 to 9 leaflets); singly serrate; teeth not gland-tipped.

Flower: Small (1-2 inches); clustered (3 to 5) in terminal cymes (May - July).

Fruit: Hips (red) with calyx persisting on the hip at fruiting time.



Scouler Willow

Salix scouleriana **SASC**
Family — Salicaceae

Range: Widespread in the Pacific Northwest.

Habitat: Our upland willow. Occurs on open forested slopes, beneath semi-closed forest canopies, and reaches greatest expression following burns and clearcutting.

Look Alikes: Other willows (spatulate leaf and upland orientation indicate SASC).

Indicator Value: Helps define ABGR and PSME series plant associations in early seral stages. Steep slope types contain SASC (i.e., ABGR/VAME, PSME/PHMA).

Miscellany: An early seral member which provides hiding cover, thermal cover and browse to elk, deer. Highly palatable. Native Americans used branches for basketry, fish traps, and other constructions requiring flexible yet woody material. Inner bark provides emergency food source and can be used as a poltice to heal wounds.



Scouler Willow

Salix scouleriana **SASC**

Habit: Tall, deciduous shrub which can reach tree size (6-30 feet tall).

Big Tree: Spout Springs, Hells Canyon NRA (Wallowa-Whitman NF), 36 inches circumference.

Stems and Bark: New twigs — sparsely to densely gray hairy; older branches-brownish black. Buds are pointed and tightly pressed against stem.

Leaves: Alternate, deciduous, spatulate with entire margins, 1-3 inches long; dark green and glabrous above, glaucous and sparse reddish hairs below.

Flowers: Catkins appearing before leaves in spring (March - June).

Fruit: Hairy capsule.



Buffaloberry

Shepherdia canadensis **SHCA**
Family — Elaeagnaceae

Range: Widespread in the northern United States.

Habitat: Occurs in mid to upper elevation forest sites.

Look Alikes: Snowberries and honeysuckles (SHCA also has opposite leaves, but the rusty-brown scales on lower leaf surface is diagnostic).

Indicator Value: Indicative of old burns. Occurs beneath grand fir, larch, and lodgepole pine-dominated forests.

Miscellany: A nitrogen-fixing plant. Another common name is "soapberry." The crushed berries mixed in water create a soapy froth which Native Americans sipped as a drink. Berries are tart, but with sugar added make a good jelly. Unpalatable plant. Attractive — especially in fruit.



Buffaloberry

Shepherdia canadensis **SHCA**

Habit: A spreading, deciduous low to medium shrub (3-6 feet tall).

Stems and Bark: Young stems — reddish brown scales cover stem; older stems — brownish.

Leaves: Opposite, deciduous ovate, 1-2 inches long, entire margin. Upper surface is dark green; lower surface is whitish with rusty-brown scales spotted throughout.

Flowers: Small, yellow, 1 to several in leaf axils, appear with or before leaves (May - June); plants are dioecious (male and female flowers on separate plants).

Fruits: Yellowish-red translucent drupe (¼ inch).



Birchleaf Spiraea

***Spiraea betulifolia* (old-*lucida*)** **SPBE**
Family — Rosaceae

Range: South in Cascades to north central Oregon and eastward to Rocky Mountains.

Habitat: Warm, dry sites beneath ponderosa pine and Douglas-fir with occurrence on warm, moist sites beneath successional grand fir.

Look Alikes: Leaves serrated from mid point to apex in *Crataegus* (armed); *Amelanchier* (venation, leaf color, serration).

Indicator Value: Indicates early seral stages of grand fir climax under lodgepole pine and indicates late seral stage on steep slope open canopy grand fir types (ABGR/VAME, ABGR/SPBE). Best expression is in Douglas-fir forests (PSME/SPBE, PSME/PHMA).

Miscellany: Low in palatability — increases with disturbance (skidding, overgrazing). Plant used by Native Americans for tea. Also called shiny-leaf spiraea.



Birchleaf Spiraea

Spiraea betulifolia **SPBE**

Habit: Low rhizomatous shrub (8-24 inches tall); forms patches with other rhizomatous plants (SYAL, PHMA, CARU, CAGE).

Stems and Bark: Erect, light yellow-brown coloration is distinctive.

Leaves: Alternate, deciduous, ovate, 1-3 inches long. Green above and paler below; coarsely double serrate from mid margin to apex.

Flowers: Small, white; borne in a dense flat-topped corymb (up to 4 inches across) (June - July).

Fruit: Glabrous follicles (5 in a cluster).



Common Snowberry

Symphoricarpos albus **SYAL**
Family — Caprifoliaceae

Range: Widespread throughout northern North America.

Habitat: A warm, dry site species where seepages or rock crevasses provide moisture in non-forest communities; optimum on warm, moist well-drained soils under ponderosa pine and Douglas-fir.

Look Alikes: *Lonicera utahensis* (larger leaves; solid white pith): *Symphoricarpos oreophilus* (tubular flowers; solid dark pith).

Indicator Value: Commonly associated in rhizomatous understories beneath ponderosa pine (PIPO/SYAL) and Douglas-fir (PSME/SYAL, PSME/PHMA, PSME/CARU). Too warm-loving for grand fir climax sites.

Miscellany: Berry is considered poisonous. Leaves and berries contain saponin which is poisonous. Palatability is low for livestock, but moderate on winter range for deer.



Common Snowberry

Symphoricarpos albus **SYAL**

Habit: Erect, rhizomatous, low shrub (2-4 feet tall).

Stems and Bark: Branching is opposite; mature stems shred and have a hollow dark pith; greyish bark (juvenile branches may not be hollow).

Leaves: Opposite, deciduous, elliptic, 1-2 inches long, entire margins (juvenile leaves may be wavy margined and lobed).

Flowers: White or pinkish, bell-shaped, corolla lobes equal tube in length; borne in 3 to 5 flowered racemes (May - June).

Fruit: White globose berrylike (⅜ inch) — persisting long after leaf fall in winter time.



Mountain Snowberry

Symphoricarpos oreophilus **SYOR**
Family — Caprifoliaceae

Range: East of the Cascades to the Rocky Mountains and south to Mexico.

Habitat: Warm, dry sites at the forest edge under Great Basin climatic influence.

Look Alikes: *S. albus* (nontubular flowers; hollow pith); *Lonicera utahensis* (larger leaves, solid white pith).

Indicator Value: Defines PSME/SYOR. A good indicator of warm, dry extreme for forest growth in the Blue and Wallowa Mountains; regeneration difficult. Silvicultural options are minimal; wildlife values are maximized.

Miscellany: Fruits are poisonous. Plant is moderately palatable and adds to a diversity of shrub, grass, forb species at the forest edge. Shape, color of foliage, and fall fruits give good horticultural attributes.



Mountain Snowberry

Symphoricarpos oreophilus **SYOR**

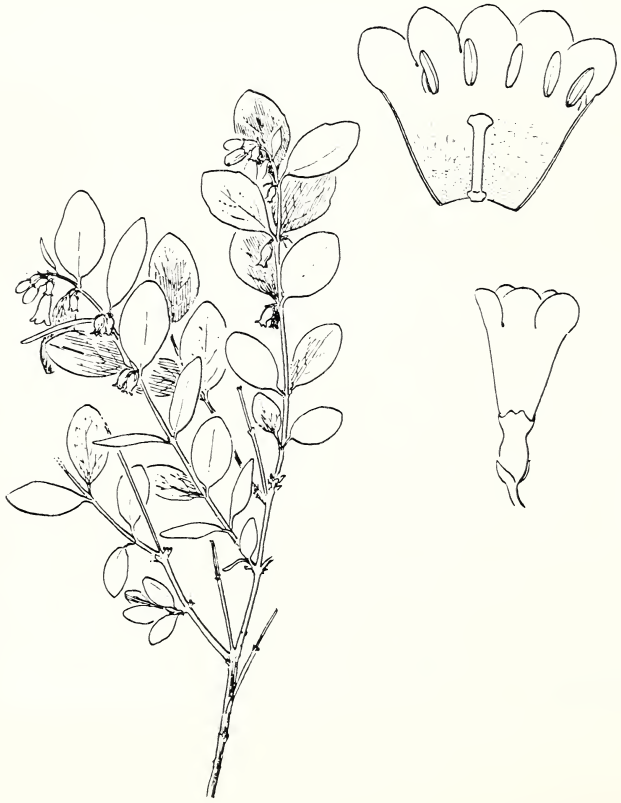
Habit: Erect, non-rhizomatous, mid-sized shrub (2-5 feet tall); separated spatially as solitary individuals; vaselike form.

Stems and Bark: Young twigs — densely short hairy; old twigs — brownish, solid dark pith.

Leaves: Opposite, deciduous, elliptic-ovate (somewhat rhombic), ¾-1 inch long; dark green (glaucous blue-green at desert edge).

Flowers: White to pinkish; elongate corolla tube longer than lobes; trumpet-like (June - August).

Fruit: Elliptic white fruits (¼-½ inch) persisting into winter.



Pacific Yew

Taxus brevifolia **TABR**
Family — Taxaceae

Range: Cascades to northern Sierras, across northeast Oregon, western and northern Idaho and northwestern Montana.

Habitat: Moist, cool to wet, well-drained sites beneath closed tree canopies. Very tolerant species.

Look Alikes: Other coniferous species (yew has pointed leaf apex, arils).

Indicator Value: Defines ABGR/TABR/CLUN plant association. Indicates sub surface free water and good spring development opportunities.

Miscellany: Wood is hard and durable. Good for posts in contact with soil. Makes excellent archery bows. Beautiful grain of wood for turned bowls. A good ornamental shrub. Fruits are highly poisonous.



Pacific Yew

Taxus brevifolia **TABR**

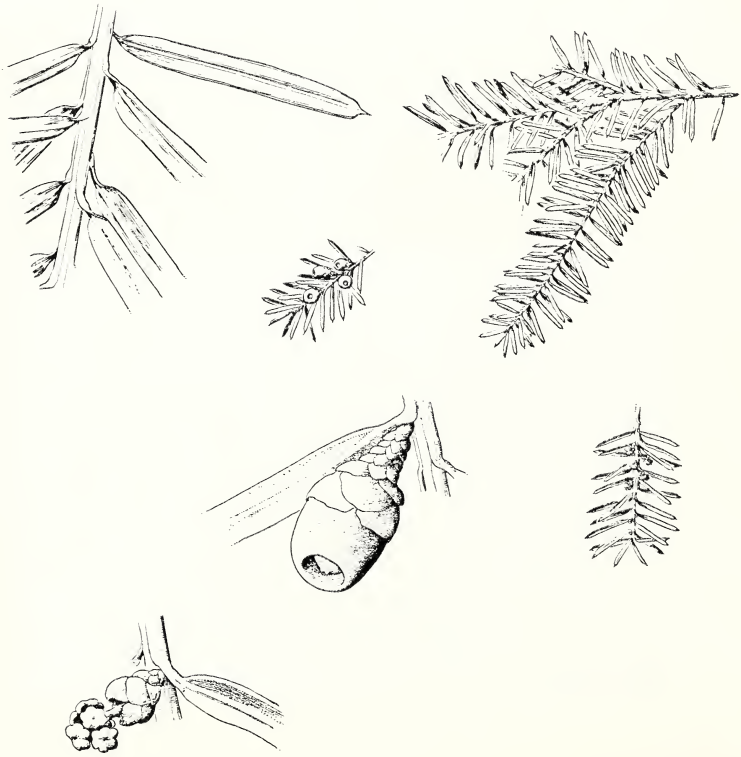
Habit: Large evergreen shrub in northeast Oregon (15-20 feet tall).

Stems and Bark: Bark very thin (¼ inch thick); scaly with reddish-purple inner bark and dark purplish or reddish-brown outer bark; trunk often contorted.

Leaves: Linear, ½-1 inch long, evergreen; dark green upper surface, paler beneath; pointed apex (mucronate), appears 2-ranked on stem.

Flowers: Yellowish staminate cones (April - June).

Fruits: Solitary, fleshy orange to red aril (poisonous).



Big Huckleberry

Vaccinium membranaceum **VAME**
Family — Ericaceae

Range: Throughout the mountainous Pacific Northwest.

Habitat: Moist, cool forested montane environments at mid to upper elvations.

Look Alikes: Blue huckleberry (*V. globulare*) — has leaves with rounded tip and smaller leaves; intergradation between Cascadian VAME and Rocky Mountain VAGL in Wallowas and Seven Devils. Considered ecologically equivalent.

Indicator Value: The most constant plant throughout all grand fir and subalpine fir plant associations of northern Blue and Wallowa Mountains. An excellent definer of true fir site potential in the northern Blues and Wallowas. Indicates acidic soils.

Miscellany: Berries are the primary native fruit occurring in the Blue and Wallowa Mountains. Excellent eaten raw, cooked in pies, pancakes, and as cobblers. YUM! Hedged by deer and elk in thermal cover areas. Nonpalatable to cattle. Major summer gathering food of the Nez Perce. The staple late summer food for black bear.



Big Huckleberry

Vaccinium membranaceum **VAME**

Habit: Erect, rhizomatous low shrub (1-3 feet tall).

Stems and Bark: Young twigs — yellowish green and angled; older twigs — grayish with shredding bark; buds pointed and tightly appressed or sunken in stem.

Leaves: Alternate, deciduous; thin, ovate with acuminate tip, serrated margin; 1-2 inches long.

Flowers: Urn-shaped yellowish-pink; corolla longer than broad, ⅛ inch long (May - June).

Fruit: Purple to dark purplish red berry (¼-½ inch broad depending on year and site). Absolutely delicious taste.



Grouse Huckleberry

Vaccinium scoparium **VASC**
Family — Ericaceae

Range: Cascades east to Rocky Mountains

Habitat: Cold sites high in elevation with heavy snowpack, but dry in summer. Also occurs at lower elevations due to cold air ponding and drainageways from higher montane elevations.

Look Alikes: Not easily confused in northeastern Oregon with other huckleberries.

Indicator Value: Defines the subalpine fir zone in northern Blues and Wallowas. In central Blue Mountains, grouse huckleberry also indicates the cold, dry ABGR/VASC plant association. Covers many subalpine acres with lodgepole pine.

Miscellany: Berries are sweet but small; edible raw or cooked. Plant unpalatable and little browsed. Birds and animals readily use fruits.



Grouse Huckleberry

Vaccinium scoparium **VASC**

Habit: Low, deciduous shrub up to 10 inches tall

Stems and Bark: Many slender upright stems (appearing broom-like); strongly angled; yellow-green; buds pointed and tightly appressed or sunken in stem.

Leaves: Alternate, deciduous, small (½ inch long), narrow, shiny light green upper surface; finely serrate margins.

Flowers: Pinkish, urn-shaped, small (June - August).

Fruits: Small (⅕ inch) bright red berries.



Bluebunch Wheatgrass

Agropyron spicatum **AGSP**
Family — Gramineae

Range: Alaska to California, east to the Dakotas and New Mexico. Widespread east of the Cascades.

Habitat: Hot, dry slopes in grasslands to warm, dry forest fringe. Occurs on shallow soil scablands where roots penetrate crevasses for moisture to deeper soil sites where optimum growth occurs (avg. is 26 inches). Under ponderosa pine, plants are widely spaced on shallow soils (avg. is 15 inches).

Look Alikes: Other wheatgrasses: (*A. caninum*) bearded — spikelets crowded; (*A. intermedium*) intermediate — unawned; (*A. trichophorum*) pubescent — short pubescent, bluish cast; (*Elymus glaucus*) blue wildrye — two sessile spikelets per node.

Indicator Value: Defines ponderosa pine climax potential sites. In absence of Idaho fescue, defines PIPO/AGSP plant associations. Often forms a forest ecotone or transition from grassland or shrub-grass steppe. A savanna plant community — difficult to extreme regeneration difficulties. May be unsuitable for silvicultural treatment.

Miscellany: Highly palatable and nutritious. Very common and abundant in the National Forests of the Blue and Wallowa Mountains. Our greatest producer of AUM's (most dry weight per acre produced by any native grass in northeast Oregon). Resists drought well. Also high in palatability and nutritious value after curing in fall and winter months. Used extensively by cattle, horses, elk, and to a lesser degree by sheep.



Bluebunch Wheatgrass

Agropyron spicatum **AGSP**

Habit: Perennial, usually caespitose (bunch-forming) but may exhibit rhizomatous tendencies at higher elevations on warm, moist sites (especially with Idaho fescue); leafage usually 12-16 inches tall; culms up to 3 feet tall.

Leaves: Flat to slightly inrolled blades; prominently veined on upper surface; bluish appearance; auricle at leaf base on culm — reddish to purplish. Slight pubescence on under surface. Some plants that are hairy above and below on leaves and culms trend toward variety ***pubescens***.

Inflorescence: Erect spike (3-6 inches long); spikelets — one per node (½-¾ inch long); 6 to 8 florets; glumes-acute to acuminate; lemma-awned (divurgent) up to ¾ inch long (June - August).



Mountain Brome

Bromus carinatus **BRCA**
Family — Gramineae

Range: Alaska to Baja California; east to Alberta, the Dakotas, Wyoming, Colorado, and New Mexico.

Habitat: Warm, dry forested communities at low to mid elevations in the mountains. Also occurs with subalpine big sagebrush at mid to high elevations.

Look Alikes: *B. inermis* (smooth brome)(spikelets not compound, lemma not keeled); *B. vulgaris* (Columbia brome)(lax, drooping).

Indicator Value: Commonly occurs with subalpine big sagebrush, mountain snowberry, and common snowberry with ponderosa pine and Douglas-fir plant associations.

Miscellany: Native Americans ground seed into meal. Resists grazing pressure and drought well. Palatable to all classes of livestock early in the growing season. Cattle and horses relish seedheads. Indicates overgrazing and soil disturbance by forming dense stands. Pocket gophers use the plant preferentially. Also known as "California brome."



Mountain Brome

Bromus carinatus **BRCA**

Habit: Perennial, fibrous roots, culms 12-40 inches tall; culms hairy — especially near the base.

Leaves: Flat (up to ½ inch wide); glabrous to hairy.

Inflorescence: Narrow panicle (4-10 inches long); spikelet (¾-1 inch long) — strongly compressed; 5 to 10 florets per spikelet; glumes and lemmas keeled; lemmas awned (straight) — up to ¾ inch long (May - August).



Columbia Brome

Bromus vulgaris **BRVU**
Family — Gramineae

Range: British Columbia to Sierras of California; east to Montana and Wyoming.

Habitat: Under firs on cool, moist forested sites at mid to upper elevations.

Look Alikes: Fairly distinctive appearance; the only native brome beneath true firs; seeded smooth brome (*B. inermis*) is rhizomatous.

Indicator Value: The common grass occurring with queen's cup, twinflower, and big huckleberry in mid to late seral grand fir communities. Also common in ABLA2/CLUN communities and the moist, cool PSME/ACGL/PHMA sites.

Miscellany: Native Americans used brome seeds for meal. Plant is used lightly by grazing animals. Palatable.



Columbia Brome

Bromus vulgaris **BRVU**

Habit: Perennial, nonrhizomatous; leafage usually 18-24 inches tall; culms up to 3 feet tall; often patch-forming.

Leaves: Drooping appearance, flat (3/8 inch wide); glabrous to hairy on both surfaces. No auricles.

Inflorescence: Open panicle (4-7 inches long); nodding or drooping. Spikelets about 1 inch long — more than 2 florets per spikelet; lemma awned (1/8-1/4 inch long) (June - August).



Pinegrass

Calamagrostis rubescens **CARU**
Family — Gramineae

Range: British Columbia south in Cascades to southern California; eastward throughout Pacific Northwest and south in Rockies to Colorado.

Habitat: Warm, dry to cool, dry sites beneath ponderosa pine, Douglas-fir, lodgepole pine, and larch at mid elevations.

Look Alikes: Elk sedge (*Carex geyeri*) — all leaves basal, dark green, coarse; 3-ranked triangular stem; inflorescence a brown cigar-like spike.

Indicator Value: Indicative of fire disturbance (often conflagrational). Early seral ABLA2 and ABGR communities may contain pinegrass in abundance — i.e., PICO (ABLA2)/VASC; PICO(ABGR)/ LIBO2. Late seral PSME communities contain high coverages of pinegrass (PSME/CARU, PSME/PHMA, SPME/SPBE).

Miscellany: Pinegrass resists fire. Palatability of pinegrass improves following burning. Seedstalks infrequent; abundant the year following fire. Forms dense mats resisting tree establishment. Very aggressive and competitive. Lightly used for forage except in spring when succulent and in fall when rains and frosts soften the leaves. The specific name "*rubescens*" refers to reddish cast of culm bases.



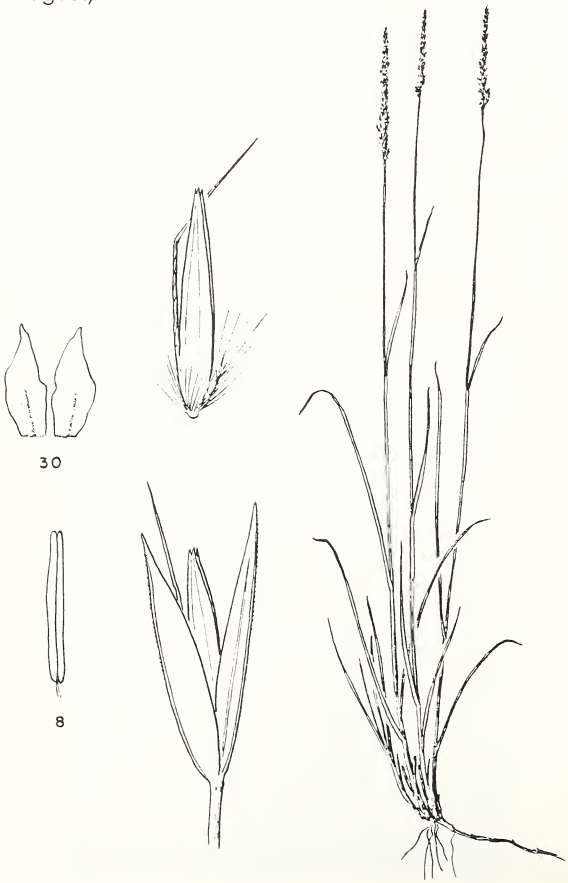
Pinegrass

Calamagrostis rubescens **CARU**

Habit: Perennial, strongly rhizomatous grass; culm bases are reddish; leafage usually 12-16 inches tall; culms up to 3 feet tall.

Leaves: Flat, drooping blades (⅛ inch wide); mostly basally arranged; auricles lacking; collar of conspicuous hairs is diagnostic.

Inflorescence: Seldom flowers; spikelike panicle (3-6 inches long); one floret per spikelet; awn twisted and bent — attached near base of lemma and extending slightly longer than spikelet (late June - August).



Northwestern Sedge

Carex concinnoides **CACO**
Family — Cyperaceae

Range: Coniferous forests of British Columbia to northern California; east to northeast Oregon, western Montana, and the Canadian Rockies.

Habitat: Dry, cool to moist, cool sites at mid to upper montane elevations.

Look Alikes: *C. rossii* (Ross sedge) — tufted; non-rhizomatous; 1 to 4 flowered; leafy bract subtends entire inflorescense; spikes among the leaves.

Indicator Value: Defines the true fir zone. Most prevalent in grand fir plant associations — especially ABGR/LIBO2. Indicative of disturbance with increased coverage in dense, colonizing patches.

Miscellany: Low in palatability. Increases with logging disturbance on skid trails and landings.



Northwestern Sedge

Carex concinnoides **CACO**

Habit: Loosely tufted from creeping rhizomes as "single" plants; grasslike perennial; culms 6-14 inches tall.

Leaves: Flat, wide blades (up to ¼ inch); overwintering green; basal sheaths reddish-brown to dark brown; 3-ranked, shiny green.

Inflorescence: Solitary, terminal staminate spike with 1 to 3 pistillate spikes below; 5 to 12 flowered; bract subtends lowest spike and is shorter than the pistillate spike; culm droops and lies prostrate when fruits mature (April - July).



Elk Sedge

Carex geyeri **CAGE**
Family — Cyperaceae

Range: Mainly east of the Cascades from British Columbia to Northern California, Utah, and Colorado.

Habitat: Warm, dry lower to mid elevation forested sites to cool, dry upper elevations in subalpine of Blue Mountains.

Look Alikes: *Calamagrostis rubescens* (pinegrass) — leaves are lighter green; not basally arranged; tuft of hair at leaf collar; awned florets; reddish culm bases. Other upland sedges — leaves shorter or wider.

Indicator Value: Strongly associated and often co-dominant with pinegrass. Most frequent and abundant in southern Blue Mountains. Optimum in Douglas-fir series plant associations (PSME/CARU, PSME/PHMA, PSME/SPBE, PSME/SYOR of Wallowas and PIPO-ABGR/CARU in the Blue Mountains. Also prominant in subalpine fir and whitebark pine savanna of the Blue Mountain crests.

Miscellany: A heavy sod former. Fierce competitor with associated rhizomatous grasses and shrubs on forested sites. Withstands heavy grazing; highly drought tolerant. Moderately palatable in early season when succulent and late season after fall rains and frosts have softened foliage. Elk use is high in early spring.



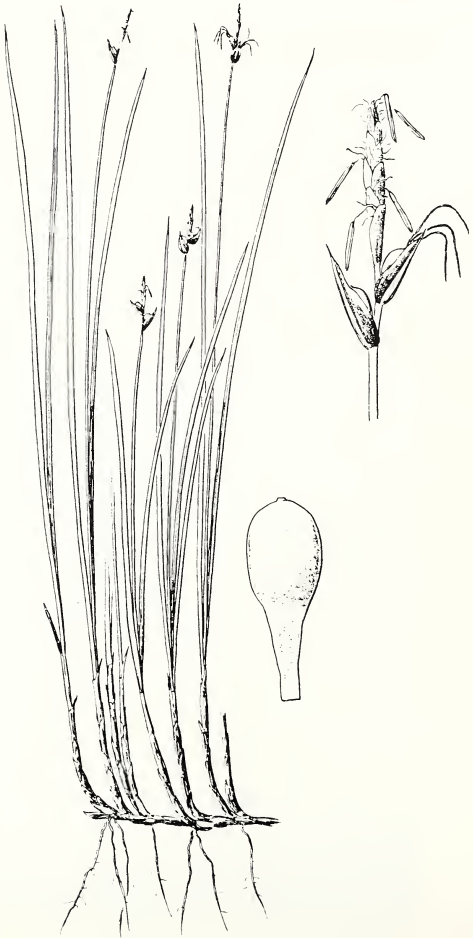
Elk Sedge

Carex geyeri **CAGE**

Habit: Loosely clustered culms from rhizomes; appearing grass-like; evergreen perennial; culms 8-20 inches tall — triangular.

Leaves: Flat, tough, evergreen; 3-ranked; brownish dried tips; basal sheathes shiny tan to brown.

Inflorescence: Solitary bractless terminal spike; 1 to 3 pistillate flowers with brownish scales below; fruit a large 3-angled achene (April - July).



Ross Sedge

Carex rossii **CARO**

Family — Cyperaceae

Range: Widespread in the western mountains of the United States.

Habitat: Warm, dry, often droughty sites in mid to upper montane elevations.

Look Alikes: *C. concinnoides* (northwestern sedge) — single stems off rhizomes; more than 5-flowered; leafy bract shorter than lowest spike; spikes above the leaves.

Indicator Value: Defines the true fir zone. Most prevalent in ABGR/CLUN, ABGR/VAME, and ABLA2/VASC communities. Also found at high elevations with alpine fescue and on rhyolites in PIPO/PUTR/CARO stands of southern Blue Mountains.

Miscellany: Increases with grazing and skidding disturbance. Low to moderately palatable. Tolerates ground fires and rebounds quickly.



Ross Sedge

Carex rossii **CARO**

Habit: Densely tufted perennial grass-like sedge; triangular culms (4-8 inches tall); short rhizomes.

Leaves: Elongate, lax (⅛ inch wide); basal sheaths reddish to burgundy.

Inflorescence: Terminal staminate spike with 1 to 4 shorter pistillate spikes below; few flowered; leafy bract subtends lowest spike and is longer than the inflorescence (May - August).



Blue Wildrye

Elymus glaucus **ELGL**
Family — Gramineae

Range: Widespread in western Canada and western United States.

Habitat: Warm, moist sites at lower to mid elevations in meadows, moist seeps beneath ponderosa pine and Douglas-fir at footslope and toeslope locations.

Look Alikes: *Agropyron* spp. (wheatgrasses)(one spikelet per node); *E. cinereus* (giant wildrye)(leaves wider, bluish cast).

Indicator Value: Indicates the clay loamy soils of good grass-producing sites with a high moisture retention capability. Tree growth is slow and regeneration is impeded by these grassy meadow sites. Ponderosa pine/blue wildrye plant association in Blue Mountains. Very shade tolerant.

Miscellany: Usually sporadic and intermingled with Kentucky bluegrass and common snowberry. Palatable to cattle and horses. Used lightly due to coarseness of foliage and seedheads. The specific name "*glaucus*" refers to the whitish or bluish cast of the foliage.



Blue Wildrye

Elymus glaucus **ELGL**

Habit: Caespitose perennial; nonrhizomatous; up to 3 feet tall, but lax culm gives semi-erect stature.

Leaves: Flat, broad (3/8 inch), blue-green; auricles well developed; collar often purple.

Inflorescence: Dense, erect spike (up to 6 inches long); spikelets — 2 per node; glumes — rigid and sharp; 3 to 5 florets per spikelet; lemma with straight awn (up to 1 inch long) (June - August).



Idaho Fescue

Festuca idahoensis **FEID**
Family — Gramineae

Range: British Columbia southward in Olympics and Cascades to Sierras and eastward to the Rockies.

Habitat: Warm, dry to warm, moist grasslands (often associated with bluebunch wheatgrass on drier sites) and extending with prairie junegrass into the ponderosa pine forested fringe.

Look Alikes: Other fescues — *Festuca occidentalis* (leaves light green, shorter; panicle open and drooping); *F. scabrella* (unawned); *F. ovina* (panicle congested; foliage yellow-green); *F. viridula* (blades flat).

Indicator Value: Slightly more mesic site than PIPO/AGSP. Occurs in PIPO/SYAL and defines PIPO/FEID plant associations. Moisture limiting; regeneration may be difficult.

Miscellany: Our second most common and important grass in the Blue and Wallowa Mountains. Has a wide ecologic amplitude (canyon north slopes at 1,000 feet elevation to subalpine ridges at 8,200 feet elevation). Palatability varies (relished by elk, sheep, and cattle in canyons in spring; little used in summer in high mountain areas). Palatability increases from south to north in Blue Mountains. Once called "blue bunchgrass" from color of leaves.



Idaho Fescue

Festuca idahoensis **FEID**

Habit: Strongly caespitose perennial; nonrhizomatous; foliage only 3-10 inches tall; culms up to 2½ feet tall.

Leaves: Basal, fine, 2-5 inches long; green to bluish cast; tightly inrolled blades; no auricles.

Inflorescence: Narrow panicle (3-6 inches long); erect and ascending spikelets; 5 to 7 florets per spikelet; lemma with stout, straight, short awn (⅛ inch) (May - July).



Western Fescue

Festuca occidentalis **FEOC**
Family — Gramineae

Range: British Columbia south to central California along the coast; east of Cascades to Idaho, Montana, and Wyoming.

Habitat: Warm, moist, mid-montane forests.

Look Alikes: *F. idahoensis* (bluish cast; narrow, erect panicle); *F. scabrella* (unawned); *Deschampsia elongata* (2 florets/spikelet).

Indicator Value: Occurs as the fescue of the mid-montane forested plant associations on warm, sunny yet moist sites (ABGR/SPBE, PSME/PHMA/ PSME/SPBE).

Miscellany: Occurs in small patches or singly in shaded portions of open canopied forests. Little forage value due to size of plant and scattered occurrence.



Western Fescue

Festuca occidentalis **FEOC**

Habit: Caespitose perennial with tufts of basal leaves (under 6 inches high); culms (2-3 feet tall).

Leaves: Basal tuft of inrolled leaves; soft yellow-green to light green; no auricle.

Inflorescence: Open panicle; drooping; large (4-8 inches long); spikelets few per panicle (3 to 5 florets per spikelet); lemmas with flexuous, slender ¼ inch awn (late May - July).



Green Fescue

Festuca viridula **FEVI**
Family — Gramineae

Range: British Columbia to California; across Canada to Alberta; south in Rockies to Montana and Idaho. Occurs in high elevations of Wallowa Mountains in Oregon.

Habitat: Subalpine forest openings, grassy alpine and subalpine slopes and ridges and in whitebark pine savanna on cold, dry and cool, moist well-drained soils.

Look Alikes: *F. idahoensis* (blades inrolled; bluish cast; narrow panicle); *F. scabrella* (lower elevations; blades inrolled); *F. ovina* (panicle congested; blades inrolled).

Indicator Value: Indicative of whitebark pine and alpine zones. Regeneration extremely difficult. Unsuitable for timber management.

Miscellany: Provides valuable sod cover to fragile high elevation sites. Degradation of green fescue communities results in rapid and severe erosion of soils. Very palatable to sheep and cattle. Ranks with bluebunch wheatgrass and timothy as one of most nutritious of grasses.



Green Fescue

Festuca viridula **FEVI**

Habit: Densely caespitose perennial; foliage 6-12 inches tall; culms 16-32 inches tall; extensive fibrous roots bind soil to 3 foot depth or greater.

Leaves: Flat blades (up to 1/8 inch wide); green; no auricles.

Inflorescence: Open panicle (2 1/2-6 inches long); spikelets (3/8-1/2 inch long); 3 to 6 florets per spikelet; lemma awnless or minutely awned (June - July).



Prairie Junegrass

Koelaria cristata **KOCR**
Family — Gramineae

Range: British Columbia south throughout much of the United States.

Habitat: Variable with wide amplitude. Strong fidelity with Idaho fescue on upper canyon slopes and grassy ridges on warm, dry sites. Occurs at higher montane elevations on well drained soils.

Look Alikes: *Poa* spp. (bluegrass)(parallel grooves on upper leaf surface; keeled leaf apex); *Phleum* spp. (timothy)(spikelets 1-flowered; glumes ciliate on keel); *Trisetum spicatum* (lemma with bent awn).

Indicator Value: Indicative of mesic ponderosa pine climax plant associations (PIPO/SYAL, PIPO/FEID) and associated with fescues in subalpine grasslands beneath whitebark pine savanna on cool, dry sites.

Miscellany: Occurs as scattered individuals rather than in pure stands. Used early by all livestock, but provides minor component of forage intake due to plant size.



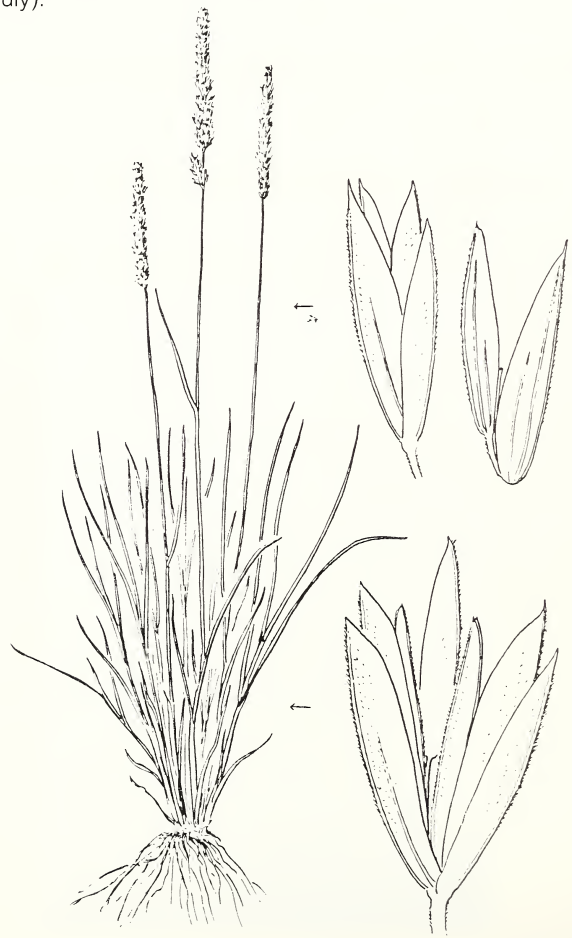
Prairie Junegrass

Koelaria cristata **KOCR**

Habit: Caespitose perennial, densely tufted; culms 1-2 feet tall — often downy.

Leaves: Flat (sometimes folded) — ⅛ inch wide; deeply grooved parallel to midvein on top surface; margins hairy; no auricles.

Inflorescence: Dense spike-like panicle (2-5 inches long); silvery (shining); spikelets 2 to 4 flowered; lemma awnless to awn-tipped (May - July).



Purple Oniongrass

Melica spectabilis **MESP**
Family — Gramineae

Range: British Columbia south to northern California (east of Cascades) and eastward to Montana, Wyoming, and Colorado.

Habitat: Subalpine forest openings, grassy alpine and subalpine slopes and ridges, whitebark pine savanna on cold, dry and cool, moist well drained soils.

Look Alikes: Other oniongrasses — *M. subulata* (lemmas acuminate); *M. fugax* (open panicle); *M. bulbosa* (culms densely clustered). *Bromus vulgaris* (droopy; open panicle-nodding; awned).

Indicator Value: Indicative of whitebark pine and alpine zones. Regeneration extremely difficult. Unsuitable for timber management.

Miscellany: Highly palatable for cattle, horses; average palatability for deer, elk, and sheep.



Purple Oniongrass

Melica spectabilis **MESP**

Habit: Rhizomatous perennial; culms 12-32 inches tall; bulbous-based and spaced about 1 inch apart on the rhizome.

Leaves: Blades flat; 3/10 inch wide.

Inflorescence: Narrow panicle (3-6 inches long); spikelets erect, purplish; 3 to 8 florets/spikelet; lemma blunt (late May - July).



Wheeler's Bluegrass

Poa nervosa* var. *wheeleri **PONEW**
Family — Gramineae

Range: Widespread in the western United States.

Habitat: Commonly occurs beneath older ponderosa pine and Douglas-fir at their bases.

Look Alikes: Other *Poa* species (PONEW — spikelets flattened; rhizomatous; lemma not cob-webby).

Indicator Value: PSME/CARU, PSME/SYAL, PIPO/SYAL, PIPO/FEID plant associations.

Miscellany: Low in palatability. Plants are scattered and have sparse foliage.



Wheeler's Bluegrass

Poa nervosa* var. *wheeleri **PONEW**

Habit: Rhizomatous perennial, tufted; culms (12-30 inches tall); lower sheaths reddish-purple.

Leaves: Flat to folded (1/16 inch wide); tips prow-shaped.

Inflorescence: Small panicle (2-4 inches long); loose; rachilla branches drooping to ascending; spikelets (1/4-1/2 inch long); 4 to 7 florets per spikelet; lemma not webbed at base; strongly keeled (April - August).



Kentucky Bluegrass

Poa pratensis **POPR**
Family — Gramineae

Range: Widespread in Canada and the United States.

Habitat: Early seral stands in degraded grasslands at lower to upper canyon and montane elevations on warm, moist to warm, dry sites on loamy and clay loam soils.

Look Alikes: *Poa compressa* (culms strongly flattened).

Indicator Value: Aggressively occupies overgrazed, scarified sites replacing Idaho fescue.

Miscellany: The most valuable and widely used lawn grass in temporate regions. Withstands heavy grazing and increases or invades on abused sites. Introduced from England by William Penn. Highly palatable to all livestock and wild ungulates.



Kentucky Bluegrass

Poa pratensis **POPR**

Habit: Rhizomatous perennial; turf-forming; foliage (up to 12 inches tall); culms may reach 3 feet tall on mesic sites.

Leaves: Blades flat (3/16 inch wide); tips prow-shaped; auricles lacking.

Inflorescence: Spreading panicles (1-4 inches long); spikelets ascending, 3 to 5 florets per spikelet; lemma strongly keeled, cobwebby at base; awnless; purplish tinged florets (May - October).



Trail Plant, Pathfinder

Adenocaulon bicolor **ADBI**
Family — Compositae

Range: West of Cascades, eastward to northern Idaho and northwestern Montana.

Habitat: Warm, moist sites at mid to low elevations in the mountains.

Look Alikes: *Arnica cordifolia* — heart-shaped leaf without dense white hairy undersurface.

Indicator Value: A good grand fir site potential indicator; especially prominant in ABGR/CLUN and ABGR/VAME late seral stands.

Miscellany: The common names are derived from path marked by the overturned leaves showing whitish undersides from the passerby. Unpalatable.



Trail Plant, Pathfinder

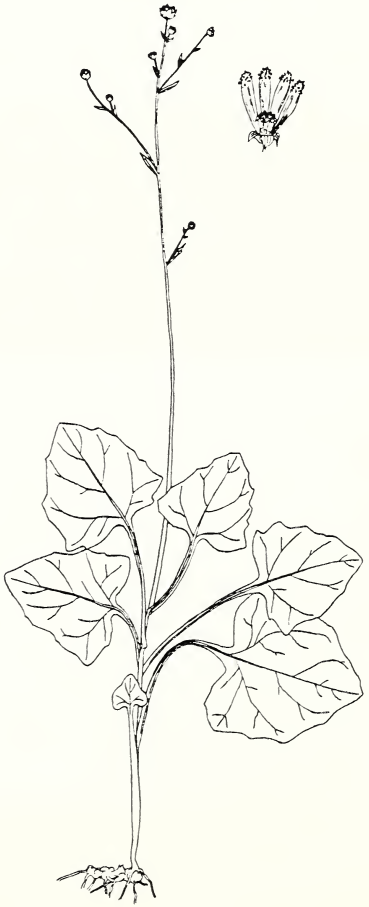
Adenocaulon bicolor **ADBI**

Habit: Deciduous, perennial forb with peduncle up to 3 feet tall.

Leaves: Alternate, triangular to heart-shaped, mostly basally arranged blades on long petioles; dark green above, densely white wooly beneath; shallowly lobed margins; up to 6 inches wide.

Flowers: Small, white heads (June - September).

Fruit: Achene with glandular stalks for clinging to passing pantlegs.



Pearly Everlasting

Anaphalis margaritacea **ANMA**
Family — Compositae

Range: Widespread in Pacific Northwest.

Habitat: Forest openings and proliferating following disturbance (clearcuts, roadcuts).

Look Alikes: *Antennaria anaphaloides* (tall pussytoes) (leaves diminish in size up the stems); *Gnaphalium* spp. (cudweeds) (dense hairs over entire plant).

Indicator Value: Defines the true fir potential sites — especially in disturbed stands.

Miscellany: A good horticultural plant — easily transplanted. Use dried plants in long-lasting floral arrangements. Native Americans used as tobacco substitute. Nonpalatable. Increases and invades due to rhizomes and seed mobility.



Pearly Everlasting

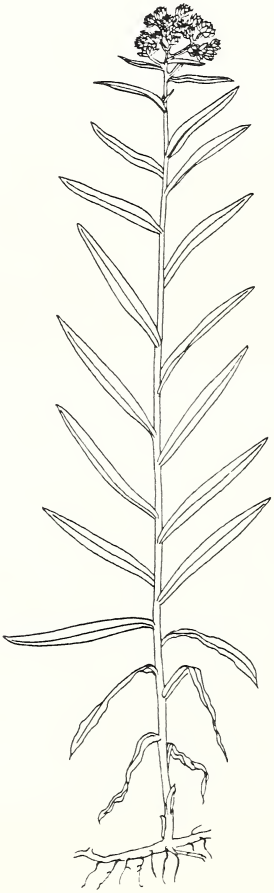
Anaphalis margaritacea **ANMA**

Habit: Erect, deciduous, rhizomatous perennial (8-30 inches tall).

Leaves: Alternate, sessile, narrow lanceolate (up to 5 inches long); entire margins, inrolled; white whooly hairs.

Flowers: Many small white flowers in heads (1/4-3/8 inch wide); involucral bracts papery, white; crowded into broad inflorescences; "pearly" refers to white, rounded heads and involucral bracts (June - September).

Fruit: Achene.



Piper's Anemone

Anemone piperi **ANPI**
Family — Ranunculaceae

Range: Eastern Washington, northeast Oregon, north and central Idaho to western Montana.

Habitat: Shady, forested sites in Douglas-fir and true fir plant associations.

Look Alikes: *Osmorhiza occidentalis* (sweety cicily)-(leaflets very similar; biternately compound; fruit and flowers distinctively different; licorice taste); *Coptis occidentalis* (goldthread)-(leaflets shiny and more ovate).

Indicator Value: Highly associated with VAME, LIBO2, and CLUN in true fir associations.

Miscellany: Used as an ointment by Native Americans to treat ulcerations; internally for lockjaw.



Piper's Anemone

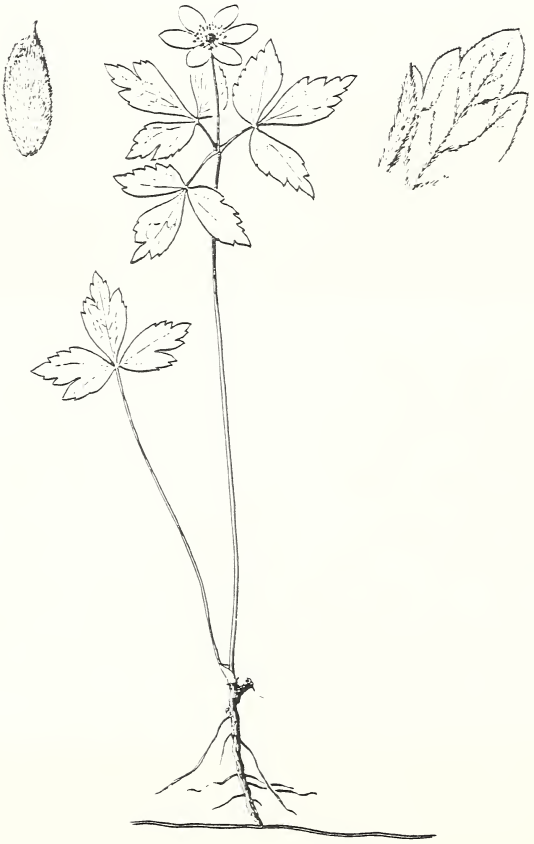
Anemone piperi **ANPI**

Habit: Erect, deciduous, rhizomatous perennial (up to 14 inches tall).

Leaves: Basal leaves may be lacking — if present, a single leaf with three doubly serrate leaflets; cauline leaves in whorl of three short-petioled leaves of three leaflets each. Coarsely serrate and incised.

Flowers: Apetalous; white or pinkish, sepals solitary, 3/4-1 inches wide (late April to early August).

Fruit: Hairy, elliptic achene.



Bigleaf Sandwort

Arenaria macrophylla **ARMA3**
Family — Caryophyllaceae

Range: Widespread in the Pacific Northwest.

Habitat: Open to closed canopy forests; warm, dry to warm, moist environments.

Look Alikes: *Stellaria jamesiana* (sticky chickweed) — leaves also opposite, but lanceolate and several times longer than broad (1-4 inches long).

Indicator Value: Occurs in PSME, ABGR, and ABLA2 plant associations; most abundant with ACGL on areas where shading animals have created disturbance.

Miscellany: Ubiquitous, small plant appearing as an annual throughout many of our forested understories. Nonpalatable.



Bigleaf Sandwort

Arenaria macrophylla **ARMA3**

Habit: Deciduous, perennial (2-6 inches tall); extensive slender rhizomes, mat-forming.

Leaves: Opposite, linear-elliptic to lanceolate, 1-2 inches long, entire margin, dark green.

Flower: White, petals shorter than sepals, 2 to 5 flowers on long petioles, borne in terminal cymes (May - August).

Fruit: Globose capsule.



Heartleaf Arnica

Arnica cordifolia **ARCO**
Family — Compositae

Range: Pacific Northwest (rare west of Cascades).

Habitat: Warm, moist forests at mid elevations.

Look Alikes: *A. latifolia* (mountain arnica) — several floral heads per stem; cauline leaves sessile; nonembedded veins in leaves.

Indicator Value: *A. latifolia* may occupy same site with ARCO or even hybridize. Wooded, open forest understories often have high compositions of ARCO. Very common in PSME/SYOR, PSME/SPBE, and ABGR series plant associations. Increases with overgrazing.

Miscellany: Native Americans used flowers in a steeped solution as a salve to wounds or cuts. Palatibility is low — flowers used by sheep and horses.



Heartleaf Arnica

Arnica cordifolia **ARCO**

Habit: Deciduous, perennial forb (4-24 inches tall); rhizomatous

Leaves: Opposite, heart-shaped, entire to toothed (2-5 inches long), fuzzy hairy, veins embedded; cauline leaves reduced and petiolate — becoming sessile at top of stem.

Flowers: Yellow rays; heads-one per stem (April - June); involucral bracts densely hairy.

Fruits: Achene — short hairy to glandular.



Mountain Arnica

Arnica latifolia **ARLA**
Family — Compositae

Range: Throughout the Pacific Northwest.

Habitat: Cool, moist forests at upper elevations.

Look Alikes: *A. cordifolia* (heartleaf arnica) — heads one per stem; petiolate cauline leaves; veins embedded in leaves.

Indicator Value: *A. cordifolia* may occupy same site with ARLA or even hybridize. Open, forest understories, especially where disturbed, contain high compositions of ARLA. Common in PSME and ABLA2 series plant associations.

Miscellany: Native Americans used flowers in a steeped solution as a salve to wounds or cuts. Palatability is low — flowers used by sheep and horses.



Mountain Arnica

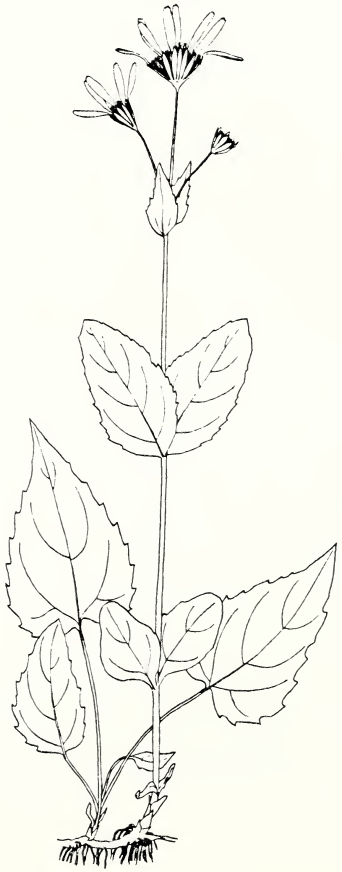
Arnica latifolia **ARLA**

Habit: Deciduous, perennial forb (4-24 inches tall); rhizomatous.

Leaves: Opposite, lance-shaped to heart-shaped, entire to toothed (1-6 inches long), glabrous to hairy, veins not embedded; cauline leaves sessile and similar in size to basal leaves.

Flowers: Yellow rays; heads several per stem (June - July); involucral bracts, glabrous to few haired.

Fruit: Achene — glabrous, or short hairy on upper part of fruit.



Wild Ginger

Asarum caudatum **ASCA3**
Family — Aristolochiaceae

Range: Mainly west of Cascades, but extending into northern Idaho and western Montana and south to northern Blue Mountains and north flank of Wallowa Mountains.

Look Alikes: *Mertensia paniculata* (basal leaves) — petioles nonhairy; *Viola orbiculata* (leaves) — toothed — 1-2 inches in diameter; *Pyrola asarifolia* (leaves) — not cordate or reniform; *Mitella* spp. (leaves) — hairy on upper surface.

Indicator Value: Defines the grand fir/sword fern-ginger plant association.

Miscellany: Root can be eaten fresh, or can be dried and ground into a ginger substitute. Unpalatable.



Wild Ginger

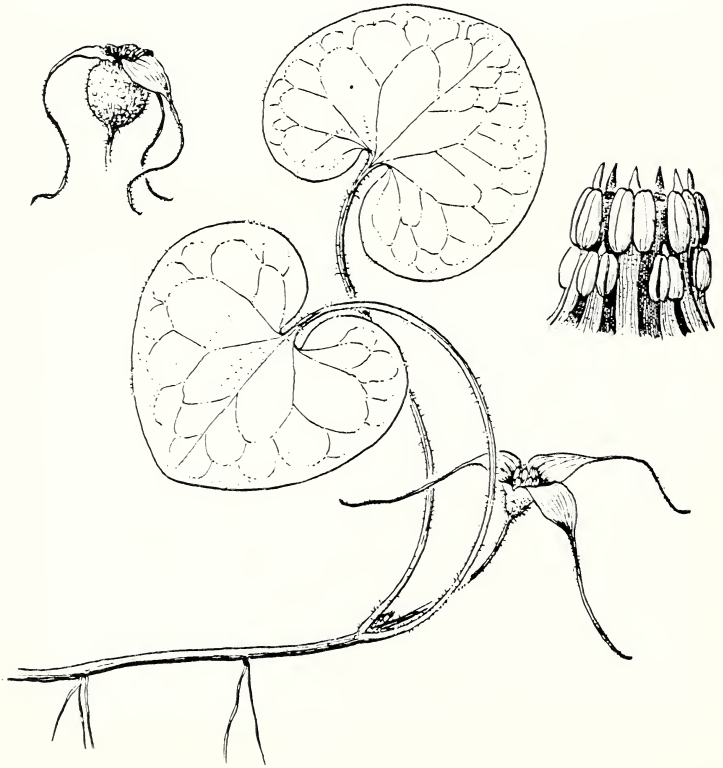
Asarum caudatum **ASCA3**

Habit: A prostrate, perennial, evergreen forb; mat-forming.

Leaves: Alternate, cordate-reniform (heart-kidney shaped), 2-4 inches in diameter, long hairy petioles; dark green (ginger-like odor when crushed).

Flowers: Solitary, ascends from ground surface; three brownish-purple sepals (3) form a bell-like base; no corolla (April - July).

Fruit: Fleshy 6-celled capsule.



Showy Aster

Aster conspicuus **ASCO**
Family — Compositae

Range: Northeast Oregon, central Idaho to Wyoming and northward to Canada.

Habitat: Open canopy forests at mid to low elevations on warm, dry sites.

Look Alikes: Leaves are diagnostic once learned.

Indicator Value: A good definer of the PSME zone. Also found in ABGR/SPBE. Strongly associated with OSCH, ARCO, AMAL, SYAL, and SPBE.

Miscellany: The common aster of lower elevation forests; frequently not flowering. Important elk fall and winter forage; fair for sheep.



Showy Aster

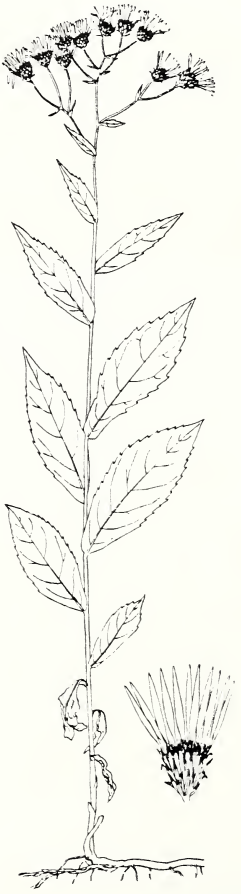
Aster conspicuus **ASCO**

Habit: Stout, rigid perennial forb; deciduous, 12-36 inches tall; rhizomatous.

Leaves: Alternate, sessile, elliptic (2-7 inches long); sharply toothed.

Flowers: Blue or violet rays; heads few to many in an open corymb, or lacking; involucral bracts acuminate, imbricated, with dense glandular hairs (July - August).

Fruits: Achene.



Bull Thistle

Cirsium vulgare **CIVU**
Family — Compositae

Range: Widely naturalized in the Pacific Northwest.

Habitat: A pioneering invader on highly disturbed sites (skid trails, landings, roadcuts, clearcuts) in mid elevation forested communities.

Look Alikes: Other thistles (*C. vulgare* — spiny-winged strip from base of leaf down stem to next leaf).

Indicator Value: Indicates severe disturbance following modification of understory in ABGR series forested communities. Likes deep, ashy soils.

Miscellany: Not a noxious weed — pioneers and is replaced in succession. Floral heads are extremely palatable to cattle and elk. Stems may be peeled and cooked with roots. "Down" from seed pappus makes good fire building tinder.



Bull Thistle

Cirsium vulgare **CIVU**

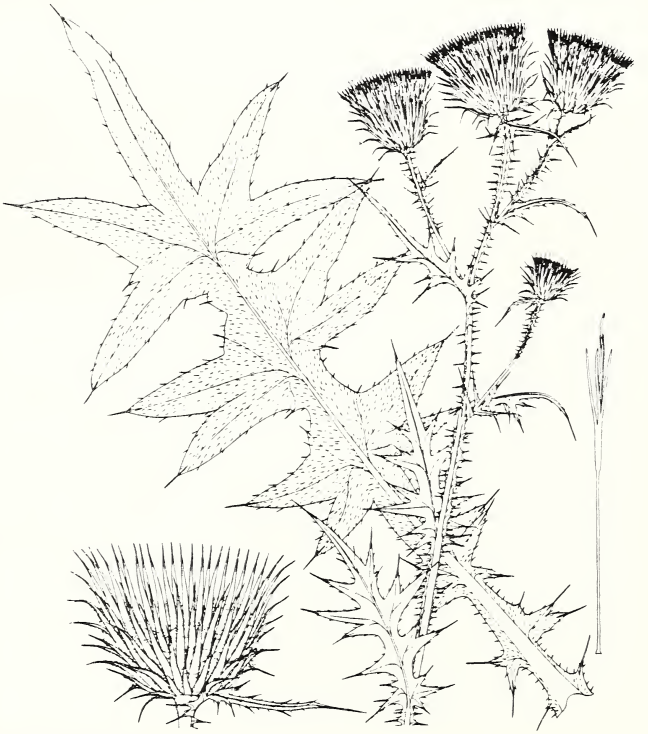
Habit: Stout biennial forb up to 4 feet tall.

Stems: Conspicuously spiny-winged from leaf bases.

Leaves: Alternate, long, deeply incised pinnate lobes with spiny tips; hairy above and white woolly to hairy below.

Flowers: Purple to rosy heads with spiny-tipped involucral bracts.

Fruits: Achene with silky pappus.



Queen's Cup, Beadlily

Clintonia uniflora **CLUN**
Family — Liliaceae

Range: Throughout the Pacific Northwest.

Habitat: Cool, moist forests.

Look Alikes: *Erythronium grandiflorum* (dogtooth violet) (succulent, nonhairy leaves); *Habenaria* spp. (bog orchids) (succulent, nonhairy leaves).

Indicator Value: Indicates the most highly producing forested sites in Blue and Wallowa Mountains; defines ABLA2/CLUN, ABGR/CLUN, ABGR/TABR/CLUN plant associations.

Miscellany: The blue berry may be toxic. The plant is unpalatable. Grouse relish the fruit. The specific name "*uniflora*" means one-flowered.



Queen's Cup, Beadlily

Clintonia uniflora **CLUN**

Habit: Low (up to 6 inches tall) rhizomatous, perennial forb; deciduous, but green until late frosts.

Leaves: Two-three basal, strap-like, oblong (up to 6 inches long), entire margins; green and glabrous above, long silvery hairs beneath and on margins of leaves.

Flowers: White, solitary, showy, 3/4-1 inch wide, bell-shaped (June - July).

Fruits: Solitary, deep lustrous blue berry.



Goldthread

Coptis occidentalis **COOC2**
Family — Ranunculaceae

Range: Northeastern Washington, northern Idaho and western Montana, southward sporadically into northeastern Oregon and adjacent central Idaho.

Habitat: Moist, warm to moist, cool environments beneath true firs.

Look Alikes: *Anemone piperi* (deciduous; leaflets more acute, not shiny).

Indicator Value: Defines the ABGR/COOC2 plant association (very limited in occurrence).

Miscellany: Golden-yellow rhizomes gives goldthread its common name.



Goldthread

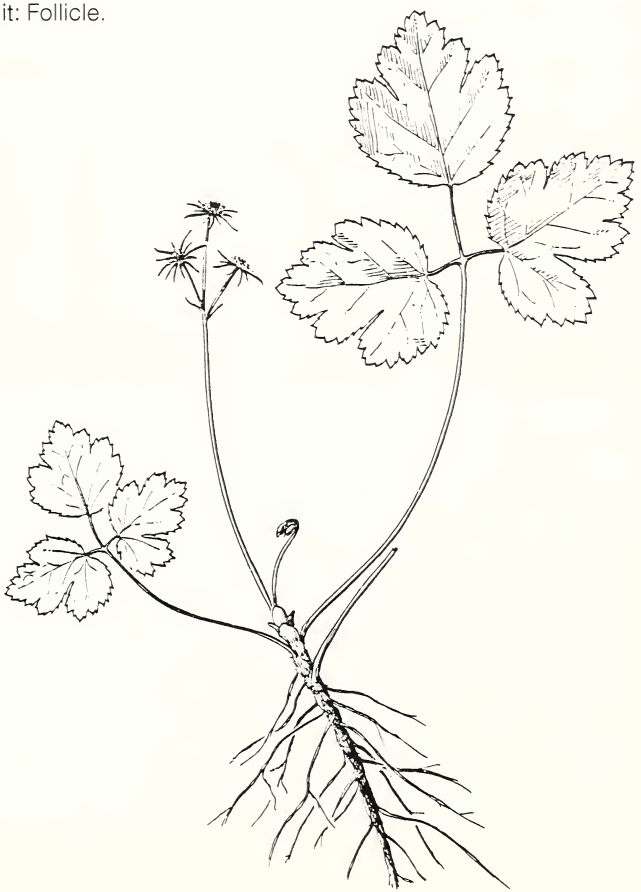
Coptis occidentalis **COOC2**

Habit: Low (4-8 inches tall), perennial evergreen forb; rhizomatous (golden-yellow).

Leaves: Basal, shiny-leathery, trifoliate with ovate leaflets (1-2 inches long), sharply serrated margins.

Flowers: White, 5 to 7 petaled, borne on naked scapes (April - May).

Fruit: Follicle.



Brittle Bladderfern

Cystopteris fragilis **CYFR**
Family — Polypodiaceae

Range: Common in the Pacific Northwest.

Habitat: Moist to somewhat dry, rocky outcroppings shaded by forest canopies at low to mid elevations.

Look Alikes: *Athyrium filix-femina* (lady fern)-(large plant crescent-shaped indusium); *Dryopteris filix-mas* (male fern)-(large plant, horseshoe-shaped indusium); *Woodsia oregana* (woodsia)-(not vase-like, plate-like indusium).

Indicator Value: Defines Douglas-fir steep slope plant associations (PSME/PHMA and PSME/ACGL/PHMA).

Miscellany: The common names come from the brittleness of the leafstalks and the shape of the indusium.



Brittle Bladderfern

Cystopteris fragilis **CYFR**

Habit: Small, delicate, perennial fern with vaselike form.

Leaves: Deciduous, glabrous; blade 10x14 inches (avg), 8 to 18 leaflets.

Sori: Cuplike indusium from a veinlet.



Fairybells

Disporum tracycarpum **DITR**
Family — Liliaceae

Range: Central and eastern Washington, Blue and Wallowa Mountains of Oregon, and the Rocky Mountains.

Habitat: Warm, moist mid to low elevation sites usually under closed canopies in the grand fir zone.

Look Alikes: *Smilacina racemosa* (unbranched, numerous flowers); **Smilacina stellata** (unbranched; raceme of 5 to 10 flowers); **Streptopus amplexifolius** (branched — green; clasping leaf bases).

Indicator Value: Defines the grand fir series plant associations and the moist sites in PSME/PHMA and PSME/ACGL/PHMA.

Miscellany: Mixed reviews on edibility of the berry. Blackfoot Indians refutedly ate them raw. Grouse also use these fruits. Plant is not palatable.



Fairybells

Disporum trachycarpum **DITR**

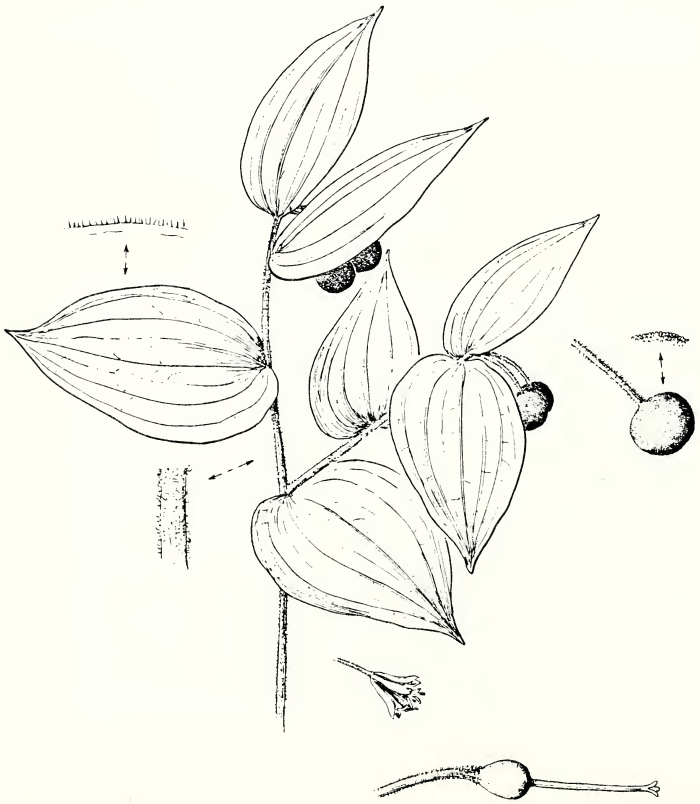
Habit: Deciduous, perennial, mid-sized forb (12-24 inches tall); branched; rhizomatous.

Stems: Branched; brownish to purplish; pubescent.

Leaves: Alternate, ovate with acuminate tips, 2-5 inches long; sessile; veins prominent; glabrous above, hairy below; ciliate leaf margins.

Flowers: Creamy white, bell-shaped; 1 to 2 pedicelled terminally (May - July).

Fruits: Green to orange to red glabrous, "bumpy" rounded berry.



Woods Strawberry

Fragaria vesca **FRVE**
Family — Rosaceae

Range: Widespread in North America.

Habitat: Wide ecologic range; subalpine fir communities on the moist, cool extreme to warm, dry ponderosa pine-dominated stands. Greatest abundance is in early seral vegetation.

Look Alikes: *F. virginiana* (broadpetal strawberry) — bluish-green, veins not prominent, surface of leaf not bulged.

Indicator Value: Indicative of open, warm, sun-filled portions of stands; early seral stages. Increases with skidding and grazing disturbance.

Miscellany: Common name "strawberry" came from practice of placing straw about plants to keep fruit from contact with soil. Fruits are "bursting" with flavor and sweetness. Teas from leaves are full of Vitamin C. Wildlife are big users of fruits. Introduced from Europe in 1700's.



Woods Strawberry

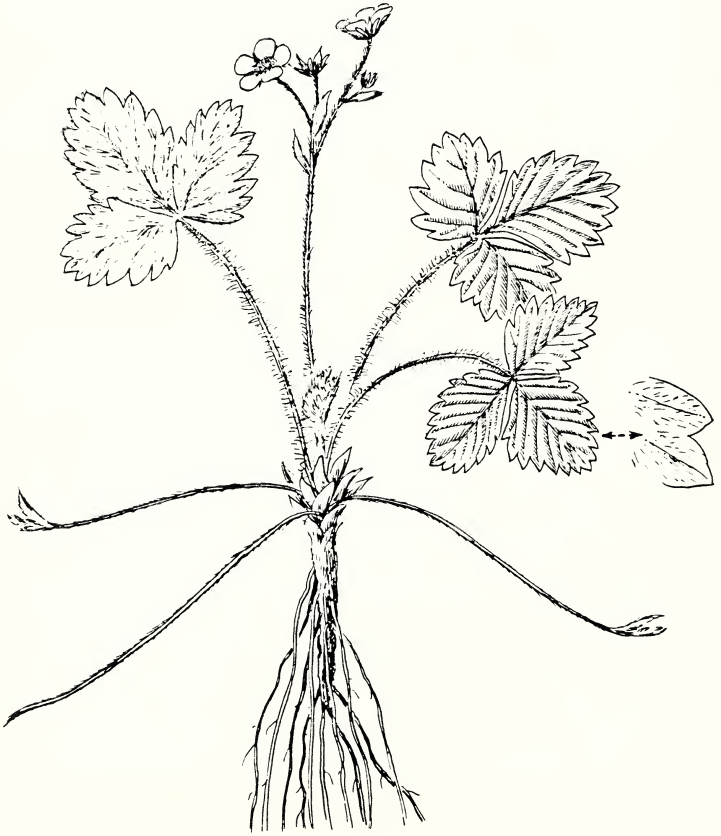
Fragaria vesca **FRVE**

Habit: Deciduous, perennial forb; strongly stoloniferous.

Leaves: Long petiolate basal leaves; trifoliate leaflets; yellow-green; upper surface bulged between veins; coarsely serrate margins.

Flowers: White, showy, 5-merous; 3 to 11 flowered cyme (April - June).

Fruits: Red, edible, mouth-watering, globose 3/8-inch berry.



Broadpetal Strawberry

Fragaria virginiana **FRVI**
Family — Rosaceae

Range: Widespread in North America.

Habitat: Warm, dry sunny portions of forested stands at mid and low elevations.

Look Alikes: *F. vesca* (Woods strawberry) — yellow-green, veins prominent, surface of leaf bulges.

Indicator Value: More restricted than *F. vesca*. Occurs in early seral lodgepole pine communities of cool, moist true fir plant associations. Common in ABGR/SPBE and warm, dry PSME and PIPO plant associations. Increases with skidding and grazing disturbance.

Miscellany: Discovered by early colonists on east coast and introduced to Europe as a superior-sized and sweeter berry. Teas from leaves high in Vitamin C. Wildlife use fruits; flavorful and sweet eaten raw, cooked in cobblers, and made into jams.



Broadpetal Strawberry

Fragaria virginiana **FRVI**

Habit: Deciduous, perennial forb; strongly stoloniferous.

Leaves: Long petiolate basal leaves; trifoliate leaflets; bluish-green; not prominently veined or bulged; coarsely serrate margins.

Flowers: White, showy, 5-merous; 2 to 15 flowered cyme (May - August).

Fruit: Red, edible, invigorates taste buds, globose 3/8-inch berry.



Sweetscented Bedstraw

Galium triflorum **GATR**
Family — Rubiaceae

Range: Circumboreal; throughout Pacific Northwest.

Habitat: Cool, moist forested communities at mid to high elevations.

Look Alikes: *G. boreale* (northern bedstraw) — perennial, many flowered, four leaves per whorl; *G. aparine* (cleavers) — annual several flowered, 6 to 8 leaves per whorl.

Indicator Value: Defines the grand fir series plant associations and cool, moist sites in PSME/PHMA communities.

Miscellany: Roasted and ground seeds are coffee substitute. Purple dye from roots. Common name "bedstraw" from use of plant in mattress ticking. The specific name "*triflorum*" refers to three-flowered inflorescences.



Sweetscented Bedstraw

Galium triflorum **GATR**

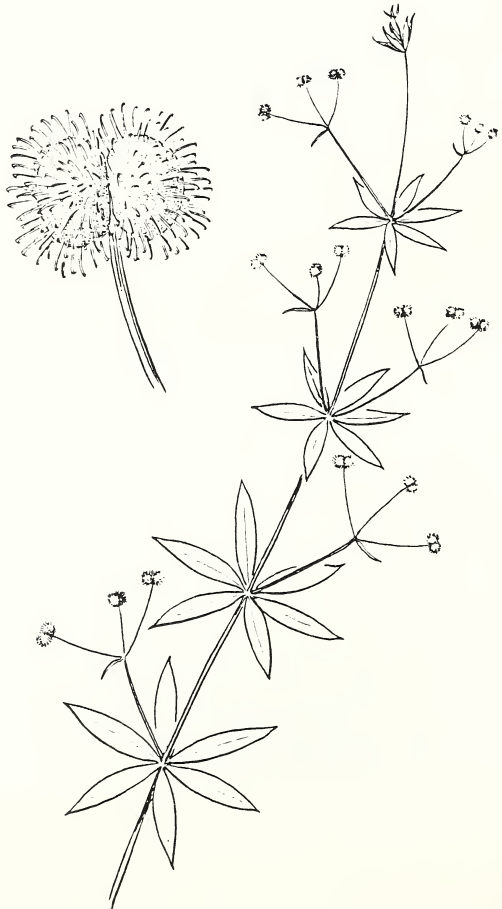
Habit: Deciduous, perennial trailing forb; creeping rhizomes.

Stem: Square; retrorse hairs on angled edge, or glabrous.

Leaves: Sessile in whorls of 6; elliptic, entire (up to 2 inches long).

Flowers: Small, white; 4-merous; borne in threes from peduncles at leaf axils.

Fruit: Capsule covered with hooked bristles.



Rattlesnake Plantain

Goodyera oblongifolia **GOOB**
Family — Orchidaceae

Range: Western and northern United States.

Habitat: Warm, moist to cool, moist forested sites in true fir series vegetation; tends to occupy needle-littered surfaces beneath dark, closed overstories.

Look Alikes: Readily recognized.

Indicator Value: Commonly found in later seral true fir plant communities associated with VAME, LIBO2, CLUN, and in moist, cool sites in PSME/PHMA stands.

Miscellany: Yes, this really is an orchid! The spikelike inflorescence resembles rattles on a rattlesnake. Plant is nonpalatable.



Rattlesnake Plantain

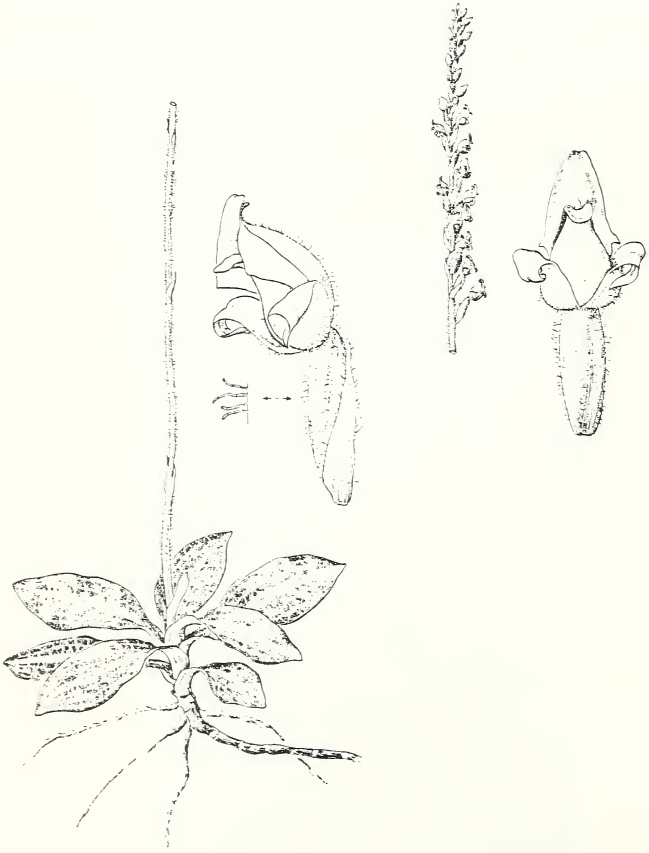
Goodyera oblongifolia **GOOB**

Habit: Perennial, evergreen forb up to 12 inches tall; short rhizomes.

Leaves: Basal rosette; thick, entire, elliptic-lanceolate (1-3 inches long); white stripe along midrib.

Flowers: Small, inconspicuous, green, hooded, 3-merous; borne in spike (4 inches long).

Fruit: Capsule.



Oak Fern

Gymnocarpium dryopteris **GYDR**
Family — Polypodiaceae

Range: Circumboreal, throughout Pacific Northwest.

Habitat: Moist, cool sites in grand fir series plant associations at mid elevations, perhaps where seepages provide unbound water.

Look Alikes: Not confused with other local ferns.

Indicator Value: Defines the ABGR/GYDR plant associations of the northern Blue Mountains.

Miscellany: The common name "oak" fern may be from Europe where it is found growing under oak trees. Unpalatable.



Oak Fern

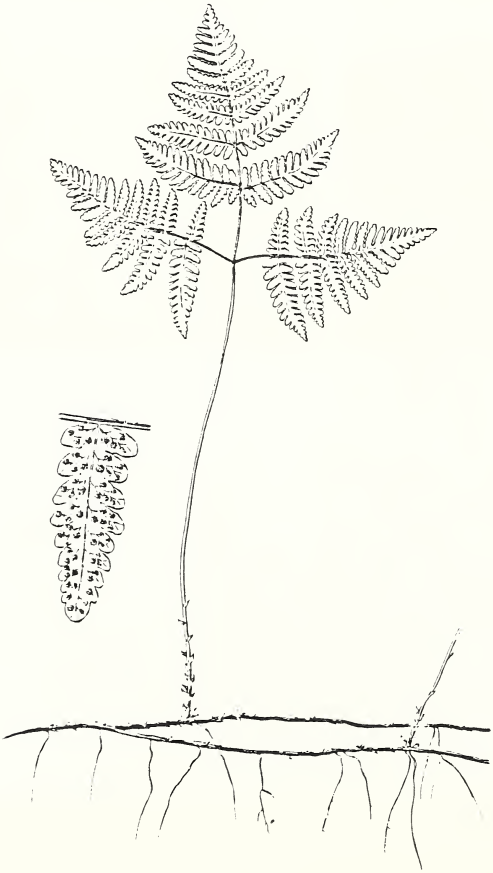
Gymnocarpium dryopteris **GYDR**

Habit: Delicate, rhizomatous, perennial fern (4-12 inches tall).

Stem: Dark brown to black.

Leaves: Deciduous, twice triangular — bipinnately compound, frond parallels ground, pinnae opposite and tapering to tip.

Sori: Indusium lacking; borne on underside of leaves.



Western Hawkweed

Hieracium albertinum **HIAL2**
Family — Compositae

Range: Eastern Washington to northeast Oregon, central Idaho and western Montana.

Habitat: Grassy steppe extending into warm, dry forest sites at lower elevations.

Look Alikes: *Hieracium albiflorum* (flowers white, less hairiness, lower leaves long, petiolate).

Indicator Value: Affinity to Douglas-fir series plant associations (PSME/CARU, PSME/SPBE). Also found in ponderosa pine plant associations.

Miscellany: Palatable to sheep, deer, and elk. Increases slightly with disturbance. Not aggressive. Used as source of chewing gum by Native Americans. The species name "*albertinum*" relates to Alberta, Canada.



Western Hawkweed

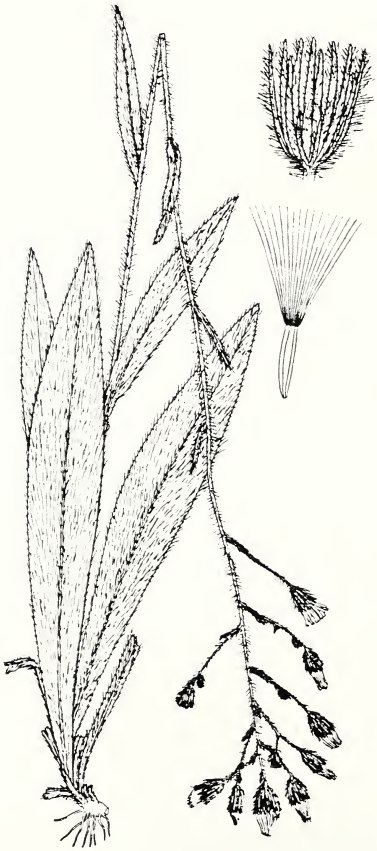
Hieracium albertinum **HIAL2**

Habit: Deciduous, short (10-20 inches) perennial forb; densely pubescent with long spreading white hairs; milky sap throughout plant.

Leaves: Lower leaves elongated without petiole; middle and upper cauline leaves reduced and sessile; alternate, entire margins; long hairy.

Flowers: Yellow, heads few to many, involucre densely hairy with stellate hairs (July - August).

Fruit: Achene.



White Hawkweed

Hieracium albiflorum **HIAL**
Family — Compositae

Range: Widespread throughout the Pacific Northwest.

Habitat: Douglas-fir to subalpine fir communities at cool, moist, mid elevations in the mountains.

Look Alikes: *Hieracium albertinum* (flowers yellow, long hairy, lower leaves sessile to short petiolate).

Indicator Value: More mesic sites than HIAL2 except where both occur in Douglas-fir series. Affinity to grand and subalpine fir series vegetation.

Miscellany: Palatable to sheep, deer, and elk. Used as source of chewing gum by Native Americans.



White Hawkweed

Hieracium albiflorum **HIAL**

Habit: Deciduous, medium (12-30 inches) perennial forb; long, scattered pubescence at plant base to glabrous above; milky sap throughout plant.

Leaves: Lower leaves elliptic with petiole; middle and upper cauline leaves reduced and sessile; alternate; margin entire to wavy.

Flowers: White, heads few to many, involucre glabrous to hairy; blackish-green color with stellate hairs (June - August).

Fruit: Achene.



Thick-leaved Peavine

Lathyrus lanszwertii **LALA2**
Family — Leguminosae

Range: Throughout the Pacific Northwest, Idaho, and Utah.

Habitat: Warm, moist to warm, dry ponderosa pine to grand fir sites at low to mid elevations.

Look Alikes: *Lathyrus pauciflorus* (broad toothed stipules, unbranched tendrils); *Lathyrus nevadensis cusickii* (stipules narrow, unbranched tendrils); *Vicia americana* (branched tendrils, style bottlebrush-like, leaves narrow, thin).

Indicator Value: Notably occurs in early and mid seral stages of grand fir plant associations where ponderosa pine and Douglas-fir dominate (ABGR/CARU, ABGR/SPBE).

Miscellany: Nitrogen fixing plant; palatable; seeds poisonous.



Thick-leaved Peavine

Lathyrus lanszwertii **LALA2**

Habit: Prostrate or climbing perennial up to 3 feet tall; rhizomatous.

Stems: Angled (not winged), trailing or clambering.

Leaves: Alternate, pinnately compound, leaflets 4 to 10 pairs; linear, thick, heavily veined; tendrils often well developed — unbranched; stipules linear to lanceolate.

Flowers: Lavender to pink-violet, pencilled red-purple; 2 to 8 on floral stalks at leaf axils; style toothbrush-like (May - June).

Fruit: Pod 1½ to 2½ inches long.



Cusick's Peavine

Lathyrus nevadensis* var. *cusickii **LANEC**
Family — Leguminosae

Range: Oregon, Washington, and Idaho.

Habitat: Open coniferous woodlands on warm, dry and warm, moist sites at mid to low elevations.

Look Alikes: *Lathyrus lanszwertii* (thick, linear leaves, narrow stipules, unbranched tendrils); *Lathyrus pauciflorus* (thin oblong leaves, broad toothed stipules, unbranched tendrils); *Vicia americana* (small, thin leaves — bottlebrush-like style, branched tendrils).

Indicator Value: Defines early seral grand fir and Douglas-fir plant associations on steep canyon slopes (ABGR/VAME, ABGR/CARU, PSME/ACGL/PHMA).

Miscellany: Nitrogen-fixing plant, palatable — especially to sheep. Seeds poisonous.



Cusick's Peavine

Lathyrus nevadensis* var. *cusickii **LANEC**

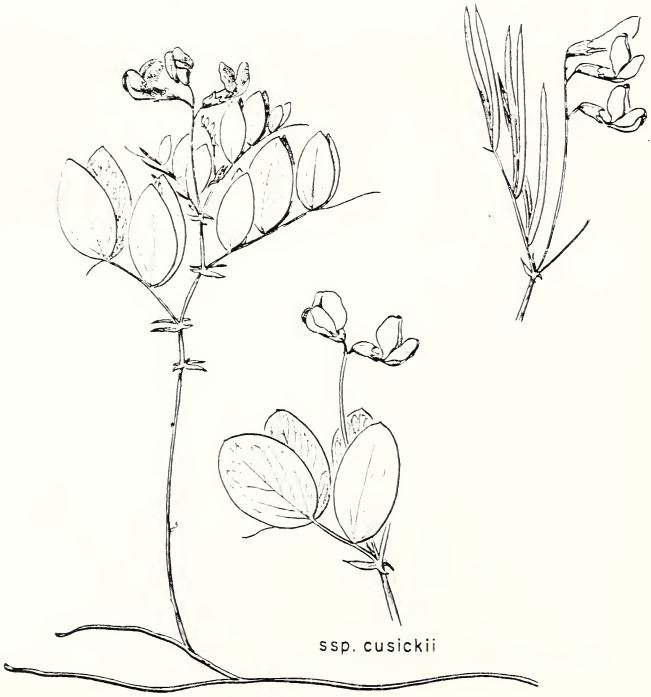
Habit: Erect, clambering, perennial forb; rhizomatous (6-32 inches tall).

Stems: Angled (not winged).

Leaves: Alternate, pinnately compound, leaflets 2 to 4 pairs; thin, ovate to obovate; unbranched tendrils; stipules lanceolate.

Flowers: White (pinkish veined); 1 to 4 on floral stalks; style tooth-brush-like (May - July).

Fruit: Pod (1-3 inches long).



Few-flowered Peavine

Lathyrus pauciflorus **LAPA2**
Family — Leguminosae

Range: Eastern Washington and Oregon to Idaho and south in Rocky Mountains.

Habitat: Warm, dry grand fir communities; warm moist Douglas-fir communities at low to mid elevations.

Look Alikes: *Lathyrus lanszwertii* (thick, linear leaves — violet flowers); *Lathyrus nevadensis cusickii* (thin, ovate leaves — white flowers); *Vicia americana* (thin, narrow, small leaves; bottlebrush style).

Indicator Value: Defines early and mid seral grand fir vegetation under ABGR/SPBE, ABGR/ACGL/PHMA and other warm, dry true fir sites.

Miscellany: Increases with grazing abuse; nitrogen-fixing; seeds poisonous.



Few-flowered Peavine

Lathyrus pauciflorus **LAPA2**

Habit: Erect, perennial forb (8-24 inches tall); strong taproot and short rootstocks.

Stem: Angled strongly (not winged).

Leaves: Alternate, pinnately, compound, leaflets thick and fleshy (8 to 10 pairs); linear-lanceolate; simple or branched tendrils; stipules ovate-lanceolate, toothed.

Flowered: Pinkish to violet-purple (aging bluish); 4 to 7 on stalk; toothbrush-like style (April - June).

Fruit: Pod (1½-2 inches long).



Linanthastrum

Linanthastrum nuttallii **LINU**
Family — Polemoniaceae

Range: Cascades, Sierras, Blues and Wallowas to Rocky Mountains.

Habitat: Dry, rocky or sandy sunny slopes at high elevations to about 9,200 feet.

Look Alikes: *Phlox* spp. — leaves not lobed or divided into leaflets.

Indicator Value: Defines the whitebark pine zone. Occurs beneath whitebark pine, lodgepole pine, and subalpine fir. Common in Wallowas on overgrazed green fescue sites.

Miscellany: Unpalatable.



Linanthastrum

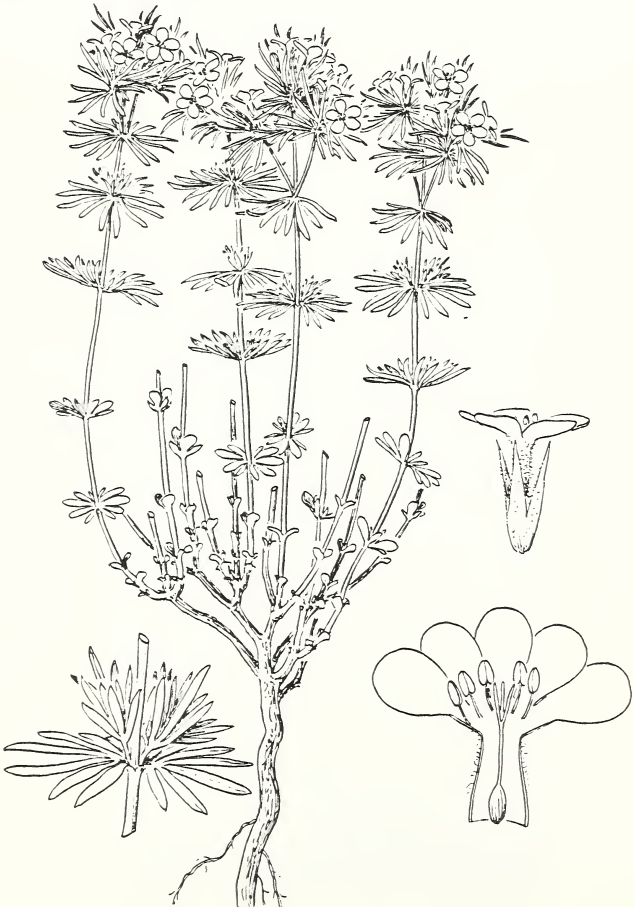
Linanthastrum nuttallii **LINU**

Habit: Taprooted aromatic perennial forb arising from woody caudex; up to 12 inches tall.

Leaves: Opposite, 5 to 9 parted into linear segments, forming a whorl; ¾ inch long.

Flowers: White with yellow throat born in small terminal cymes (June - August).

Fruit: Oblong capsule.



Tailcup Lupine

Lupinus caudatus **LUCA**
Family — Leguminosae

Range: Eastern Oregon, southward to California, east to Montana and Colorado.

Habitat: Typically occurs beneath ponderosa pine in low to mid-elevation warm dry sites.

Look Alikes: Other lupines especially *L. laxiflorus* (hairs on wing petals; upper calyx lip ¼ wing petal length or less). **Indicator Value:** Prominent beneath successional and climax ponderosa pine communities (i.e., ABGR/CARU, PSME/CARU, PSME/SPBE, PIPO/SYAL, PIPO/FEID and PIPO/AGSP). Increases with grazing degradation.

Miscellany: Poisonous to sheep and horses, toxic to sheep. Seeds and pods most toxic parts. Pocket gophers use roots extensively. Native Americans used teas from seeds to help urination and as emergency food (following leaching). Belief in birth of a daughter if pregnant woman drank tea from lupine root extract. Nitrogen-fixing.



Tailcup Lupine

Lupinus caudatus **LUCA**

Habit: Silvery erect perennial forb (8-16 inches tall); woody caudex.

Stems: Clustered, vaselike.

Leaves: Alternate, deciduous, 7 to 9 palmately-divided oblanceolate leaflets — up to 2 inches long; petiole two times as long as blade on basal leaves; silky hairy on both leaf surfaces.

Flowers: Light blue to violet; racemes up to 12 inches long; calyx spurred; wing petal glabrous; banner hairy on upper surface; calyx lip 1/3 - 3/4 as long as wing petals (May - July).

Fruit: Silky hairy pod about 1 inch long.



Spurred Lupine

Lupinus laxiflorus **LULA2**
Family — Leguminosae

Range: Mainly east of Cascades in Washington, Oregon; east to Idaho, Montana, Utah, and Nevada.

Habitat: Moist, warm to dry, cool mid to high elevation sites occurring with virtually all coniferous tree species in northeastern Oregon.

Look Alikes: Other lupines, especially *L. caudatus*-glabrous wing petals; upper calyx lip ⅓ wing petal length or greater.

Indicator Value: Often mixed with *L. caudatus* at lower elevations beneath pines; reaches high into Wallowas (up to 8,000 feet) with green fescue beneath lodgepole pine and subalpine fir.

Miscellany: Taken in quantity, LULA2 can cause colic in horses, excitability in sheep, and prostration in cattle. Mature fruits are especially toxic to cattle. Nitrogen-fixing.



Spurred Lupine

Lupinus laxiflorus **LULA2**

Habit: Greenish to grayish erect perennial forb (8-20 inches tall); woody caudex.

Stem: Clustered, ascending vaselike.

Leaves: Alternate, deciduous, 7 to 11 palmately-divided oblanceolete leaflets 1-2 inches long; petiole 2 to 4 times as long as lower basal blades; glabrous or pubescent above.

Flowers: Creamy to bluish, pinkish, violet, rose or purple often on same plant; racemes up to 8 inches log; calyx spurred; wings pubescent on tips; banner hairy on upper surface; calyx lip 1/5 to 1/4 as long as wing petioles (May - July).

Fruits: Silky-hairy pods about 1 inch long.



Alpine Mitrewort

Mitella pentandra **MIPE**
Family — Saxifragaceae

Range: Throughout the Pacific Northwest.

Habitat: Moist, cool forested sites; along streams and in wet meadows.

Look Alikes: *Heuchera* species (leaves with hairy petioles; petals not lobed — often missing); *Mitella breweri* (7 to 11 lobes on leaf; flowers in all-sided raceme); *Mitella stauropetala* (5 to 7 lobes on leaf, purplish beneath; one-sided raceme).

Indicator Value: Often beneath moist, cool ABGR and ABLA2 plant associations; common in spruce bottoms.

Miscellany: Easily grown in the transplant garden.



Alpine Mitrewort

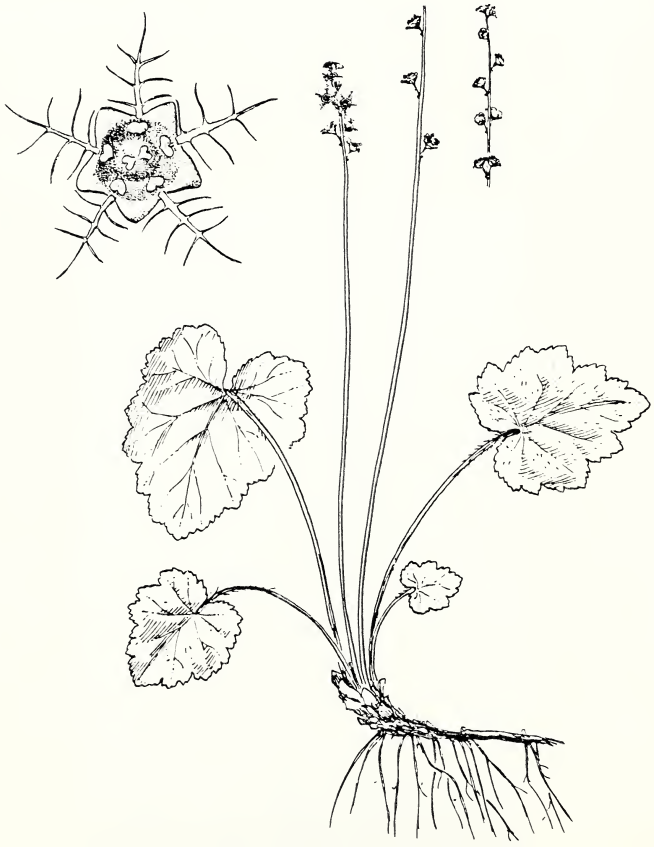
Mitella pentandra **MIPE**

Habit: Low, deciduous, perennial forb; scapes 8-12 inches tall; often stoloniferous.

Leaves: Basal, long-petioled, ovate-cordate (1-2 inches wide); glabrous to scattered hairy.

Flowers: Petals greenish, dissected in 8 to 10 filiform segments; calyx saucer-shaped; 5 stamens located opposite petals; raceme 6 to 25 flowered on all sides (June - August).

Fruit: Many tiny, shiny black seeds located in capsule.



Side-flowered Mitrewort

Mitella stauropetala **MIST2**
Family — Saxifragaceae

Range: Blue, Wallowa, Ochoco Mountains of eastern Oregon, extreme eastern Washington to Rocky Mountains.

Habitat: Moist, warm to moist cool upland forests.

Look Alikes: *Heuchera species* (leaves with hairy petioles; unlobed petals — often missing); *Mitella breweri* (leaves 2-3 inches wide, flowers 20 to 60, stamens alternate with petals); *Mitella pentandra* (leaves 1-2 inches wide, flowers 6 to 25, stamens opposite the petals).

Indicator Value: Defines PSME and ABGR site potentials (most common in steep slope communities of ABGR/VAME, ABGR/ACGL, PSME/ACGL/PHMA, PSME/PHMA).

Miscellany: Not palatable.



Side-flowered Mitrewort

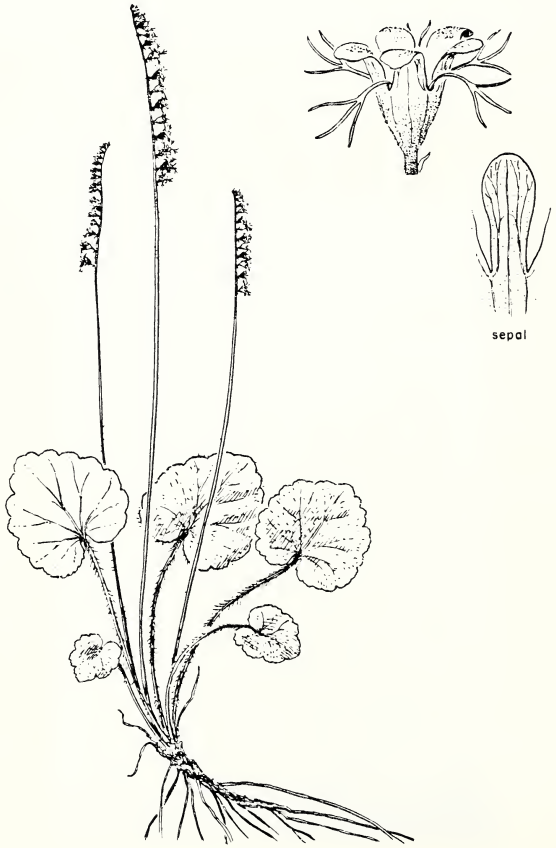
Mitella stauropetala **MIST2**

Habit: Low, deciduous, perennial forb; scapes up to 20 inches tall; rhizomatous.

Leaves: Basal, cordate to reniform (1-3 inches wide); sparsely hairy on both sides; often purplish-tinged.

Flowers: Petals greenish-white to purplish-tinged; dissected in three filiform segments; calyx bell-shaped; five stamens alternate with petals; raceme 10 to 35 flowered on one side (May - June).

Fruit: Many tiny, shiny black seeds located in capsule.



Sweet Cicely, Sweetroot

Osmorhiza chilensis **OSCH**
Family — Umbelliferae

Range: Throughout the western and northeasten United States; Chile and Argentina.

Habitat: Wide range from warm, dry to cool, moist sites from mid to upper elevations.

Look Alikes: *O. occidentalis* (glabrous fruits; pungent licorice smell); *Coptis occidentalis* (shiny, ovate leaflets); *Anemone piperi* (three biserrate leaflets; non-licorice taste).

Indicator Value: Common in Douglas-fir warm, dry associations (PSME/SYOR) throughout most true fir associations (ABLA2 and ABGR).

Miscellany: Palatable to cattle, sheep, deer, and elk (*O. occidentalis* is highly palatable, relished). Roots are edible; gives anise flavoring to food and drink.



Sweet Cicely, Sweetroot

Osmorhiza chilensis **OSCH**

Habit: Deciduous perennial forb (12-40 inches tall); well-developed taproot.

Stem: Slender, solitary or branched; light hairiness.

Leaves: Basally arranged; thin, biternately compound; ovate, coarsely serrated, incised or lobed leaflets (1-3 inches long). Usually 1 to 3 cauline leaves on short petioles.

Flowers: Greenish-white, inconspicuous, borne in compound umbels (April - June).

Fruit: Green (drying black), hairy schizocarp with beak at apex (clings to clothing).



Sickletop Lousewort

Pedicularis racemosa **PERA**
Family — Scrophulariaceae

Range: Widespread in Pacific Northwest.

Habitat: Cool, moist upper elevation sites in spruce and subalpine fir communities.

Look Alikes: *P. contorta* (narrow, pinnate leaves); *P. bracteosa* (large, pinnately compound leaves).

Indicator Value: Defines subalpine fir zone vegetation; natural regeneration difficulties.

Miscellany: Our only lousewort with simple leaves. Intermediate host to stalictiform blister rust. Unpalatable. Also called "parrot's beak" based on distinctive upper corolla lip.



Sickletop Lousewort

Pedicularis racemosa **PERA**

Habit: Deciduous, perennial forb (6-20 inches tall); woody caudex.

Leaves: Simple, alternate, cauline only, linear to lanceolate (2-4 inches long); doubly serrate margin.

Flowers: White; galea arched and tapers into a down-curved beak ("parrot's beak"); raceme spikelike (June - September).

Fruit: Capsule, flattened and arched.



Skunk-leaved Polemonium

Polemonium pulcherrimum **POPU**
Family — Polemoniaceae

Range: Throughout the mountainous western United States.

Habitat: Moist, cool often shaded areas at high elevations.

Look Alikes: Other *Polemoniums* (P. viscosum, P. elegans — corolla tube longer than calyx); (*P. occidentale* — tall (1-3 feet), single stem).

Indicator Value: Defines subalpine fir (ABLA2/VASC) and whitebark pine plant associations. Severe regeneration difficulty.

Miscellany: Unpalatable to cattle; slightly palatable to sheep. Also known as "Jacob's ladder" from leaflet orientation. Emits a "skunky" odor on crushing of foliage — thus its common name.



Skunk-leaved Polemonium

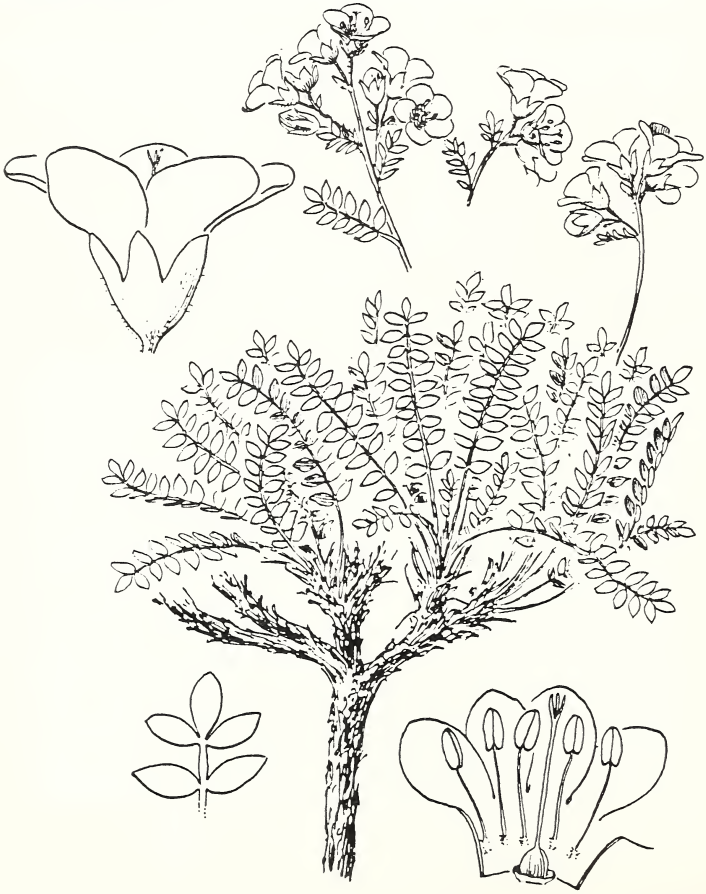
Polemonium pulcherrimum **POPU**

Habit: Deciduous, erect, perennial forb; 12-20 inches tall; clustered stems from branched woody caudex.

Leaves: Alternate, deciduous, pinnately compound (11 to 15 leaflets); oval to orbicular; emits "skunky" odor on crushing.

Flowers: Blue with light yellow to white throat; showy; bellshaped; borne in cymes (May - August).

Fruits: Capsule.



Western Swordfern

Polystichum munitum **POMU**
Family — Polypodiaceae

Range: Abundant in and west of the Cascades; extending across northern Washington to northern Idaho and northwest Montana; occasional in northern Blue Mountains and Northern Wallowa Mountains.

Habitat: Moist areas in grand fir sites where maritime climatic influence occurs.

Look Alikes: *P. lonchitis* (holly fern) — smaller, leaves up to 2 feet long. lower leaf segments smaller than middle ones; teeth of segments spread outward.

Indicator Value: Defines the grand fir/sword fern — ginger plant association.

Miscellany: Unpalatable. Used by florists for sprays and wreaths. Named for sword-like shape of leaflets.



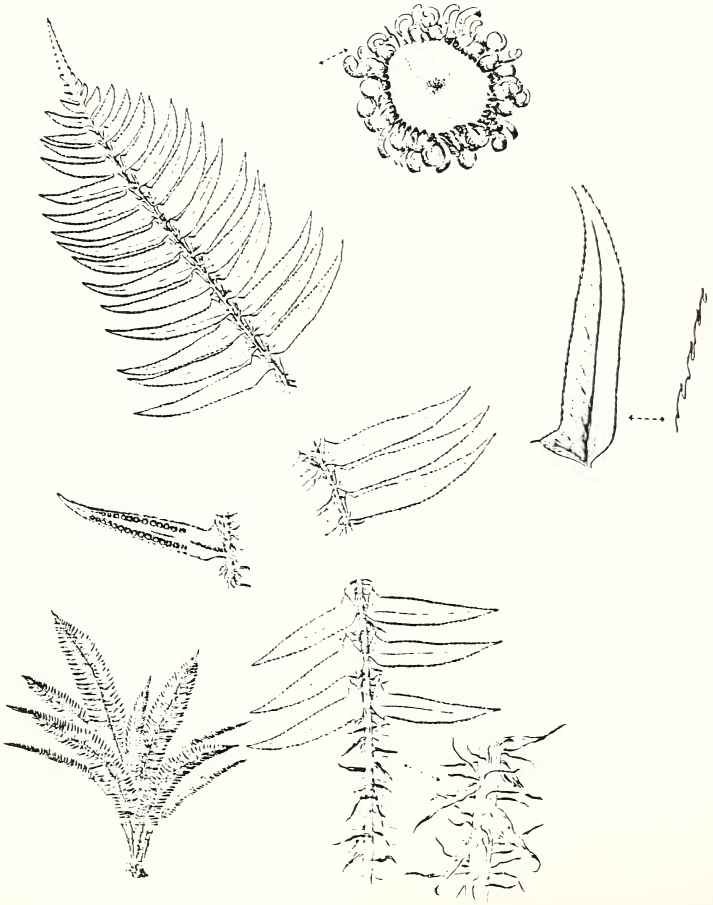
Western Swordfern

Polystichum munitum **POMU**

Habit: Large, perennial fern; tufted on short, stout caudex, covered with reddish-brown scales.

Leaves: Evergreen, leathery, stiffly erect, lance-shaped (6-50 inches); 35 to 70 pinnae (1-6 inches long), basal lobe projects upward; teeth incurred and spiny.

Sori: Circular, borne on upper and middle pinnae in rows between rib and leaf margin.



Bracken Fern

Pteridium aquilinum **PTAQ**
Family — Polypodiaceae

Range: Widespread throughout the Pacific Northwest.

Habitat: Warm, dry mid elevation sites as invader and colonizer following fires, clearcutting, and burning (resists drought).

Look Alikes: Readily recognized.

Indicator Value: Pioneering species on clearcuts, road cuts and fills, and burns in the early seral stages of grand fir series plant associations.

Miscellany: Very resistant to fires; regenerates rapidly. Allelopathic. Poisonous to livestock if taken in quantity. Fiddleheads may be eaten after boiling. Use should be restricted to minimize possible toxicity accumulation over time.



Bracken Fern

Pteridium aquilinum **PTAQ**

Habit: Medium to large, erect fern (2-4 feet tall); vigorously clonal; rhizomatous.

Leaves: Deciduous, single fronds; tripinnately compound blade (1-3 feet long); pinnules alternate; edges rolled under with dense hairs.

Sori: Enclosed by narrow, inrolled leaf margins.



Pink Wintergreen

Pyrola asarifolia **PYAS**
Family — Ericaceae

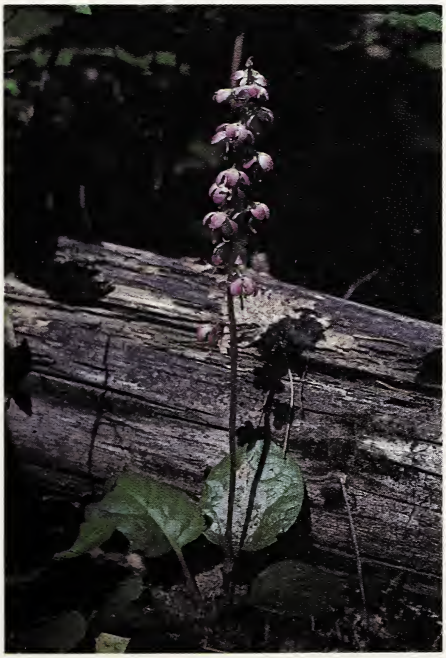
Range: Western United States, across Canada to NE North America.

Habitat: Moist, cool mid to upper elevations beneath shady closed canopies.

Look Alikes: *Asarum caudatum* (cordate to reniform leaf); *Viola orbiculata* (thin, serrated leaf); other *Pyrola* species — (more leathery, larger, shinier leaf of PYAS).

Indicator Value: Defines late seral true fir plant associations (ABLA2/LIBO2). Regeneration difficult.

Miscellany: Unpalatable. Waxy flowers are among the showiest.



Pink Wintergreen

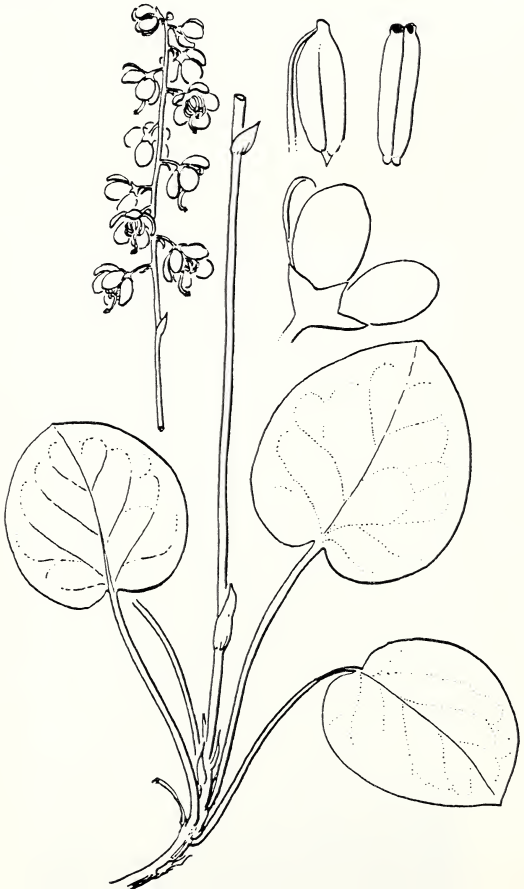
Pyrola asarifolia **PYAS**

Habit: Low evergreen, perennial forb (6-16 inches tall); rhizomatous.

Leaves: Basal, simple, circular to elliptic (1-3 inches wide); leathery; entire margin; shiny, dark green above and purplish beneath. No white mottling.

Flowers: Pink, rose, or purplish-red; waxy; strongly curved style; 10 to 25 flowers in elongate terminal raceme (June - September).

Fruit: Capsule.



Sidebells Pyrola

Pyrola secunda **PYSE**
Family — Ericaceae

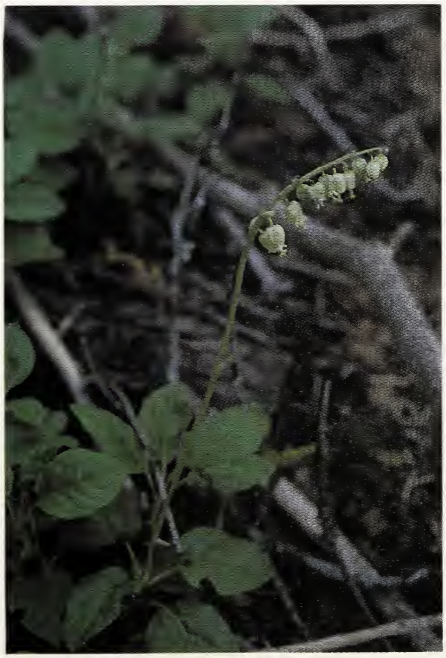
Range: Widespread in North America.

Habitat: Cool, moist dark sites beneath dense tree canopies at mid to upper elevations.

Look Alikes: Other *Pyrolas* (PYSE has leafy aerial stem, light green leaves, and flowers on one side of raceme).

Indicator Value: Defines sites capable of supporting the true fir and mountain hemlock plant associations.

Miscellany: Unpalatable.



Sidebells Pyrola

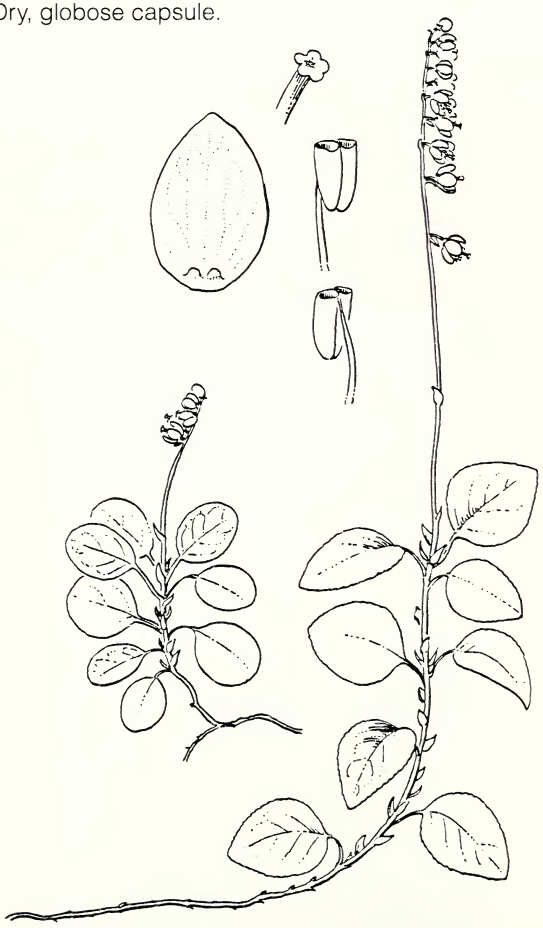
Pyrola secunda **PYSE**

Habit: Low, evergreen, perennial forb (2-6 inches tall); rhizomatous.

Leaves: Alternate, thin, shiny light green above and pale below; ovate to ovate-elliptic (1½-2½ inches long) on short petioles.

Flowers: White; straight style; borne on one-sided 6 to 20 flowered raceme (June - August).

Fruit: Dry, globose capsule.



Arrowleaf Groundsel

Senecio triangularis **SETR**
Family — Compositae

Range: Widespread in mountains of the western United States.

Habitat: Cool, wet and cool, moist soils at upper elevations under spruce, subalpine fir, and as a riparian species.

Look Alikes: Easily recognized.

Indicator Value: Unbound water beneath Engelmann spruce and subalpine fir often associated with twisted stalk, meadowrue, tall bluebells (ABLA2/STAM).

Miscellany: Palatable to deer and elk; highly palatable to sheep.



Arrowleaf Groundsel

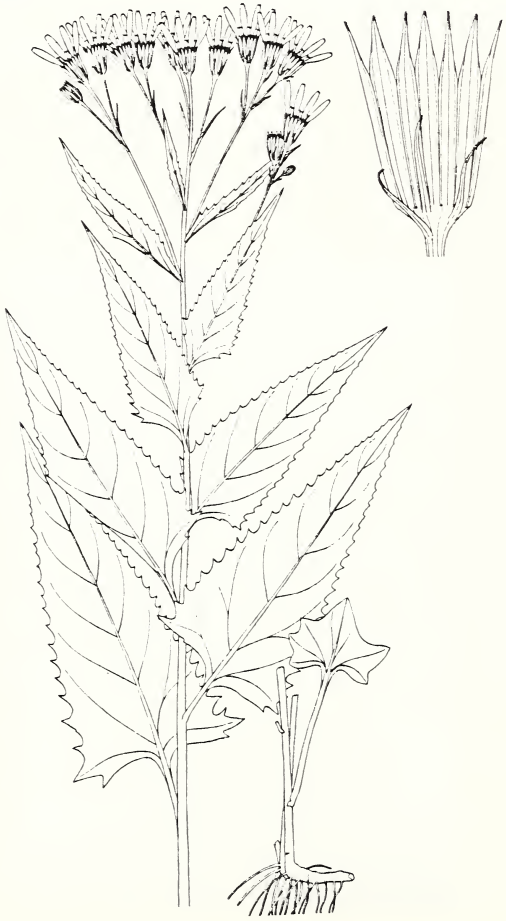
Senecio triangularis **SETR**

Habit: Tall, deciduous perennial forb (1-5 feet tall); clustered stems.

Leaves: Numerous, alternate, triangular-shaped (2-8 inches long); lower leaves large with long petioles; reduction in size upwards as leaves become sessile.

Flowers: Yellow; numerous heads in flat-topped inflorescence (June - September).

Fruit: Achene.



False Solomon's Seal

Smilacina racemosa **SMRA**
Family — Liliaceae

Range: Widespread throughout the United States.

Habitat: Warm moist to warm dry habitats in relatively open forested stands often on outcroppings.

Look Alikes: *S. stellata* (few flowered raceme; leaves 2-6 inches long; narrower); *Streptopus amplexifolius* (branched; clasping leaf bases); *Disporum trachycarpum* (branched; rounded leaf bases).

Indicator Value: Douglas-fir (PSME/ACGL/PHMA) and grand fir (ABGR/ACGL, ABGR/VAME) plant associations; steep slope orientation.

Miscellany: Unpalatable. Berries used by grouse. Native Americans used berries to prevent scurvy; too many berries results in laxative reaction. Rootstocks make a good pickle.



False Solomon's Seal

Smilacina racemosa **SMRA**

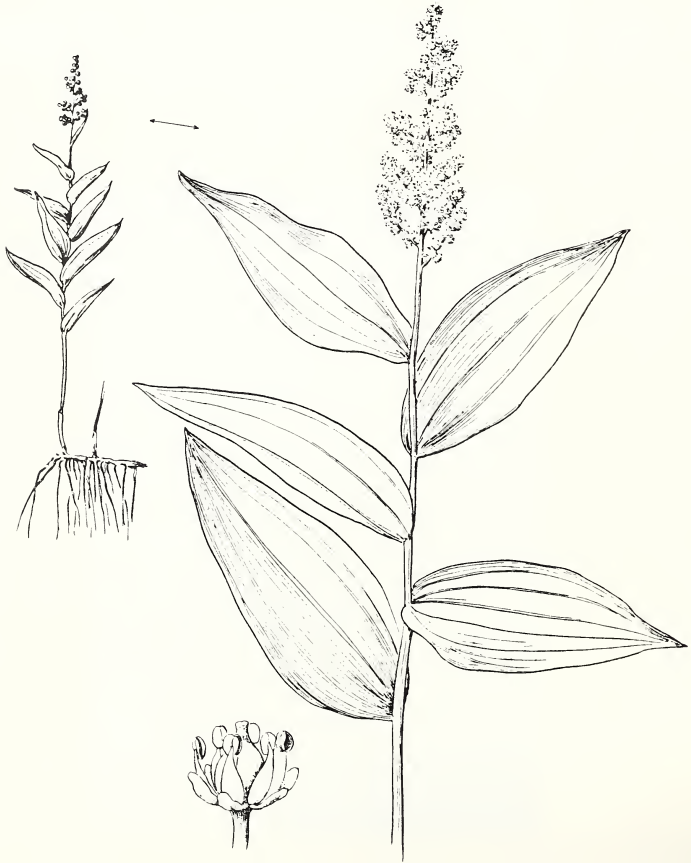
Habit: Mid sized (1-3 feet tall) deciduous, perennial forb; strongly rhizomatous.

Stem: Erect, unbranched, green; arched or curving downward.

Leaves: Alternate, simple, sessile, lanceolate (3-8 inches long); parallel venation; slightly clasping.

Flowers: Many, small, white; terminal panicle up to 5 inches long (April - July).

Fruit: Globose berry (½ inch or smaller); green-brown to red.



Starry Solomon's Seal

Smilacina stellata **SMST**
Family — Liliaceae

Range: Widespread throughout the United States.

Habitat: Cool, moist habitats in closed canopy forests at mid elevations.

Look Alikes: *S. racemosa* (many flowered panicle; leaves 3-8 inches long; broader); ***Streptopus*** (branched; clasping leaf bases); ***Disporum*** (branched; rounded leaf bases).

Indicator Value: Cool, moist shaded subalpine fir (ABLA2/CLUN, ABLA2/LIBO2) and grand fir (ABGR/CLUN, ABGR/TABR/CLUN) plant communities.

Miscellany: Unpalatable. Berries are edible — but have laxative reactions. Grouse use the berries.



Starry Solomon's Seal

Smilacina stellata **SMST**

Habit: Low (8-24 inches tall) deciduous perennial forb; rhizomatous.

Stem: Erect, unbranched, green; arched.

Leaves: Alternate, simple, sessile, lanceolate (2-6 inches long); parallel venation; slightly clasping.

Flowers: Few (5 to 10), small, white; terminal raceme is up to 3 inches long; rachis of inflorescence is "ziz-zag" (May - June).

Fruit: Globose berry (less than ½ inch); greenish yellow turning blackish.



Twisted Stalk

Streptopus amplexifolius **STAM**
Family — Liliaceae

Range: Widespread throughout the United States.

Habitat: Wet, moist sites at mid elevations where soils are waterbound.

Look Alikes: *Disporum trachycarpum* (rounded leaf bases; not clasping); *Smilacina racemosa* (unbranched; terminal panicle); *Smilacina stellata* (unbranched; terminal raceme).

Indicator Value: Indicates the ABLA2/STAM plant association.

Miscellany: Berries eaten by Native Americans and used by grouse. Unpalatable. May have laxative properties.



Twisted Stalk

Streptopus amplexifolius **STAM**

Habit: Tall (2-4 feet) deciduous perennial forb; rhizomatous.

Stem: Erect, branched, green.

Leaves: Alternate, simple, sessile, ovate, acuminate tips; 2-5 inches long, parallel venation; cordate clasping leaf bases.

Flowers: Greenish-white, 3-merous bell-shaped; 1 to 2 flowers on "twisted stalked" pedicels beneath each leaf (May - July).

Fruit: Oblong, bright yellow-orange translucent berry.



Western Meadowrue

Thalictrum occidentale **THOC**
Family — Ranunculaceae

Range: Throughout the Pacific Northwest and Rocky Mountains.

Habitat: Wide range of habitats from warm, moist and warm, dry at mid elevations to cool, dry and cool, moist at upper elevations.

Look Alikes: *Aquilegia* spp. (leaves less dissected; leaflets larger; prominent veins); *T. fendleri* (achenes erect; stigma not purplish).

Indicator Value: Defines the cool, moist end of Douglas-fir series (PSME/ACGL/PHMA) and common throughout true fir series plant associations. Increaser with disturbance. Most prominant in mid seral stages.

Miscellany: Unpalatable. Plants are dioecious.



Western Meadowrue

Thalictrum occidentale **THOC**

Habit: Mid sized (1-3 feet) deciduous, dioecious perennial forb.

Stems: Glabrous, slender.

Leaves: Alternate, 3 to 4 times ternate; leaflets rounded, three lobed and 2 to 3 times toothed or lobed; horizontal orientation; green above, pale below.

Flowers: Inconspicuous, greenish-white, borne in a panicle; stigma purplish (May - July).

Fruits: Spindle-shaped achene (three prominant veins on side).



Coolwort Foamflower

Tiarella trifoliata* var. *unifoliata **TITRU**
Family — Saxifragaceae

Range: Widespread in Pacific Northwest.

Habitat: Cool, moist streamsides and bottom locations (often under spruce).

Look Alikes: *Mitella* spp. (capsules are saucer-shaped); *Coptis occidentalis* (shiny leaves).

Indicator Value: Indicative of spruce-dominated bottoms and late seral ABLA2/CLUN plant communities.

Miscellany: Unpalatable. Common name "foamflower" derived from the gross appearance of the inflorescence.



Coolwort Foamflower

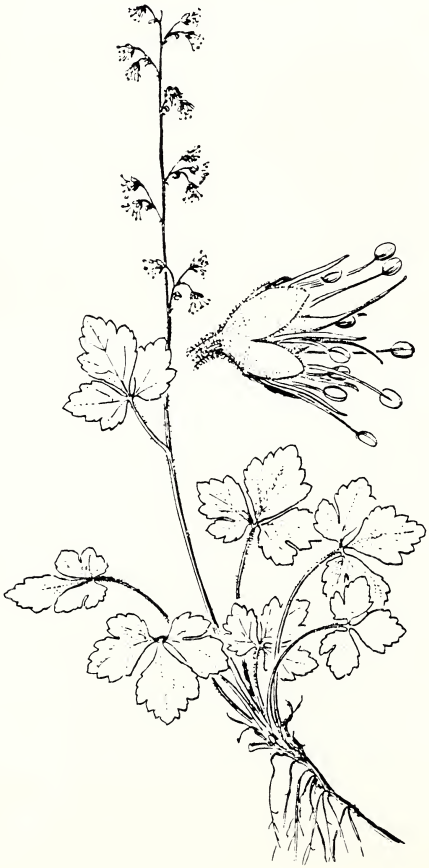
Tiarella trifoliata* var. *unifoliata **TITRU**

Habit: Low to mid sized (8-20 inches) deciduous, perennial forb; rhizomatous.

Leaves: Simple, 3 to 5 lobed (2-3 inches long).

Flowers: White, 5-merous, bell-shaped in elongate panicles (June - August).

Fruit: Conspicuous, unequally two-valved capsule.



False Bugbane

Trautvetteria caroliniensis **TRCA3**
Family — Ranunculaceae

Range: Widely distributed in North America and Japan.

Habitat: Cool, wet sites at upper elevations.

Look Alikes: Very distinctive, but could be confused with *Trollius laxus* (fruit a follicle).

Indicator Value: ABLA2/STAM and ABGR/CLUN (wet microsites).

Miscellany: Unpalatable. The common name "bugbane" may be due to toxicity of plant.



False Bugbane

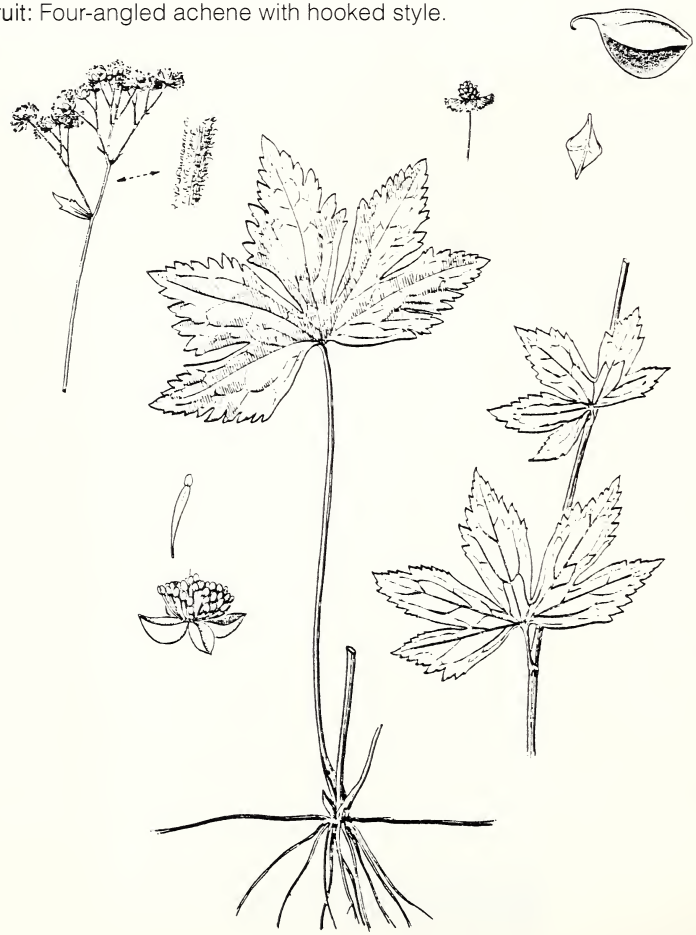
Trautvetteria caroliniensis **TRCA3**

Habit: Erect, tall (20-32 inches) deciduous, perennial forb; rhizomatous.

Leaves: Basal; long-petiolate, wide (4-10 inches) palmately divided blade with 5 or more lobes; cauline — alternate, short petiolate.

Flowers: Inconspicuous, white to greenish, borne in terminal corymbs (May - August).

Fruit: Four-angled achene with hooked style.



Sitka Valerian

Valeriana sitchensis **VASI**
Family — Valerianaceae

Range: Eastern Washington, western Montana, northeastern Oregon, central Idaho.

Habitat: Cool, moist to cold, moist sites at high elevations with heavy snowpack.

Look Alikes: Very distinctive. *V. edulis* occurs at lower elevations and lacks a defined petiole on the leaves; inflorescence a panicle.

Indicator Value: Defines the ABLA2 series well (ABLA2/VASC, ABLA2/VAME).

Miscellany: Sites will be difficult to regenerate. Highly palatable to sheep, deer, and elk. Roots are foul smelling and tasting.



Sitka Valerian

Valeriana sitchensis **VASI**

Habit: Deciduous, tall (1-4 feet) perennial forb; fibrous-rooted from branched caudex.

Leaves: Opposite, odd-pinnately compound; toothed margins; terminal leaflet largest; most are cauline with petioles.

Flowers: White, funnel-shaped, borne in rounded compact inflorescence.

Fruit: Glabrous, plumed achenes.



Woodland Violet

Viola glabella **VIGL**
Family — Violaceae

Range: Throughout the Pacific Northwest.

Habitat: Mesic wooded and forested sites at mid elevations.

Look Alikes: *V. orbiculata* (round leaf and apex); *V. adunca* (ovate leaf; purple flowers).

Indicator Value: Indicative of Douglas-fir and grand fir potential sites.

Miscellany: Unpalatable. Use of leaves for salads — high in Vitamin C.



Woodland Violet

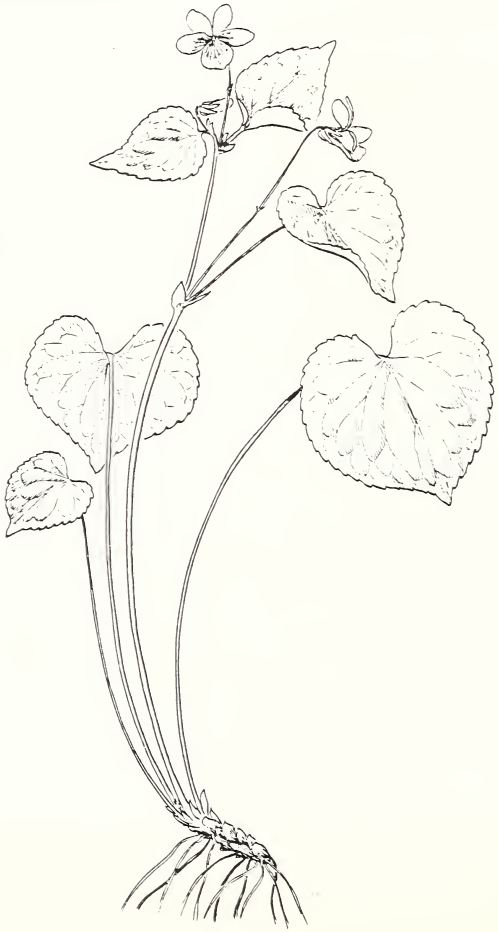
Viola glabella **VIGL**

Habit: Erect, deciduous, low perennial forb (up to 12 inches tall); fleshy rootstock.

Leaves: Ovate-cordate to reniform, 1-3 inches wide, acute apex.

Flowers: Yellow with lower 3 petals purple-veined; leafy aerial flowering stems (March - July).

Fruit: Exploding capsules.



Round-Leaved Violet

Viola orbiculata **VIOR2**
Family — Violaceae

Range: Olympics, Cascades to northern Oregon; northern Idaho, northwest Montana, and northeastern Oregon.

Habitat: Cool, moist shaded sites at mid and upper elevations.

Look Alikes: *V. glabella* has cordate-reniform leaves and pointed leaf tips; *V. adunca* has ovate leaves with acute tip.

Indicator Value: Defines the true fir (ABLA2 and ABGR) series of plant associations.

Miscellany: Unpalatable. Use leaves for salad greens — high in Vitamin C.



Round-Leaved Violet

Viola orbiculata **VIOR2**

Habit: Erect, deciduous, low perennial forb (2 inches tall); short rootstock without stolons; old petiole bases exposed.

Leaves: Orbicular (round) with cordate base and round apex; glabrous, thin, small (1-2 inches wide).

Flowers: Lemon-yellow to golden; lower three petals purple-veined.

Fruit: Exploding capsule.



Goosefoot Violet

Viola purpurea **VIPU**
Family — Violaceae

Range: North central Washington to California; east to Montana, Wyoming, and Colorado.

Habitat: Dry, warm forested and nonforested sites.

Look Alikes: A very distinctive violet.

Indicator Value: Found in ponderosa pine and nonforested communities where drought limits regeneration and reforestation opportunities.

Miscellany: Unpalatable.



Goosefoot Violet

Viola purpurea **VIPU**

Habit: Erect, deciduous, low perennial forb (2-6 inches tall); shallow scaly rhizome.

Leaves: Thick, fleshy ovate (½-1½ inches wide); deeply toothed; glaucous-green and purplish or purple veined. Flowers: Yellow with brown pencilling (May - August).

Fruit: Exploding capsule.



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